

AUG 1 1927

PROCEEDINGS

of the

American Society

of

Civil Engineers

TWO PARTS



PART 1

AUGUST, 1927

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AMERICAN SOCIETY OF CIVIL ENGINEERS

PROCEEDINGS

VOL. LIII

AUGUST, 1927

NO. 6

SOCIETY AFFAIRS

Freeman Fund Scholarship Awarded

The Freeman Fund Traveling Scholarship providing for one year's study abroad in connection with European hydraulic laboratories has been awarded to Mr. Lorenz G. Straub. This is the first award to be made. Mr. Straub left for Europe early in July and expects to remain abroad for his full year's work. As required by the conditions of this prize, he will make a report for the benefit of members, which, it is hoped, will appear in Society publications.

The recent Mississippi River floods and the widespread public interest occasioned by them give added importance to all hydraulic studies. This is especially true as regards river flow, a subject to which European laboratories have devoted much attention and added valuable scientific knowledge. Presumably the studies under the Freeman Fund Scholarship will take cognizance of all these and other similar recent developments abroad, and, it is hoped, will give added impetus to like research in America.

Mr. Straub is well fitted to undertake this task. He has done graduate work at the University of Illinois, receiving both Master's and Doctor's degrees. Throughout his courses, he has shown marked ability in research work and has earned the recommendation of all his associates at the University. In addition, for several years he was in engineering practice in Kansas City on water supply and structural design. In

undertaking this work, he will carry the congratulations and good wishes of the Society.

Changes in the Make-Up of "Proceedings"

Those members most interested in *Proceedings* will probably note some innovations in its make-up now introduced in the present August number.

Some of these are returns to original methods in vogue years ago. For example, the headings of all papers are expanded as to space and content. They have a more formal dignity; but this is not the purpose in view. The headings required for *Transactions* are much similar and thus the changes necessary when the paper is finally printed in its permanent form are minimized by the custom now re-adopted.

Further, all papers begin on right-hand pages. This helps the appearance by adding something of dignity to the title of the paper. The real purpose however is to facilitate the removal of any paper for permanent keeping.

Still another change toward this same end is the use of two wire staples in binding, instead of three. It is believed that this construction is sufficient as far as strength is concerned, and that it certainly will be more convenient in dismembering any issue for the purpose of saving for ready reference, any particular paper.

These changes are all somewhat dependent on still another improvement in the general policy. Papers are now accepted

for publication in *Proceedings* only, with the idea that those which have superior merit will be included in *Transactions*.

The number of papers presented for publication grows apace. The interests of members are expanding, as indicated by the extension of Technical Divisions. All this means more demand for published matter. And yet it is thought that the literature of ultimate permanent value may be relatively limited and that the papers singled out should be those to be fitted within the compass of a volume of *Transactions* of the usual size.

For this reason, *Society Proceedings* now becomes of more than temporary value. Any member who sees a need for a particular paper would do well to save the *Proceedings* until he is sure that this subject will be included in the *Transactions* the following year. It is hoped that the changes in *Proceedings* will lend themselves to a real use for members.

Student Conference at Asheville

One of the significant features of the Society's Spring Meeting in Asheville, N. C., was the Student Conference held on the afternoon of April 20. For one thing, the attendance was large and representative. Possibly 100 students were in attendance, and these represented 12 Universities scattered throughout the South. One delegation came from as far as Mississippi, about 450 miles.

Yet it was not the size so much as the nature of the gathering that gave it importance. Every college through one of its representatives gave a report on its method of conducting activities.

These experiences were by no means uniform. One Chapter required attendance at meetings in return for college credit; another conducted regular initiations; still another found a real advantage in stimulating inter-chapter athletic games; and another placed great value on participation in a public demonstration of university activities.

It was quite apparent from these that no standard method would fit all institutions. In fact, this question was raised and the answer was emphatic that procedure should be adapted to environment in every case. College customs seem to be strange habits in many ways and yet each serves its local need and grows to have a meaning of its own.

Unquestionably, the students themselves got quite a "kick" out of this meeting; some came by automobile—one Ford runabout seemed to give utmost satisfaction for its delegation of five

students. The boys' entertainment was a simple matter. Some lived in private homes and some were provided with cots in the attic of the hotel. There could be no doubt as to the fact that "a good time was had by all".

As a part of the program of the meeting a "Question Box" was held. Various inquiries ranged from student activity matters to those of employment, service in foreign countries, etc. These were answered by professors, by Society officers, and other engineers whose experience made them qualified to judge.

All in all, this meeting made a most pleasant impression on older and younger men alike. It would be well if every quarterly meeting of the Society could receive as much benefit from student activities.

Louvain University Completes Five Centuries of Progress

Louvain University, in Belgium, is one of the oldest and most important institutions of higher learning in Europe. It received especial notice during the World War on account of its severe losses. Subsequently, the American nation showed its appreciation of the accomplishments of Louvain University by substantial gifts toward its rehabilitation.

Thus, ties of sentiment and respect bind engineers and Americans to Louvain. These were accentuated in the celebration of its Five Hundredth Anniversary on June 28 and 29, 1927.

Edward Dean Adams, Delegate

American engineers were officially represented by Edward Dean Adams, Fellow, Am. Soc. C. E., sent more particularly by Engineering Foundation. Through this organization, he thus represented the four Founder Societies. Mr. Adams presented the felicitations of American engineers in the following terms:

"TO THE RECTOR

OF THE UNIVERSITY OF LOUVAIN:

"I have the honor and great privilege of presenting to the University of Louvain, on its fifth centenary, the congratulations of the Engineering Foundation, the Engineering Societies Library, and the Engineering Societies of the United States of America which they serve, and to unite with them in wishing the University another half millennium of great usefulness. So broadly and firmly has the University laid its foundations

that its superstructure of learning may securely rise to still greater heights.

"On behalf of the Engineering Societies of my country, I express the desire for effective co-operation with the University of Louvain and the Belgian Societies of Engineers in research for Truth and its application for the welfare of Mankind."

Besides his official credentials, Mr. Adams carried many documents and publications of the Founder Societies as gifts to the University of Louvain, these expressing again the sympathy and fellowship that have been so evident in other days.

Society's Greetings

Every member of the Society may feel a personal part in this celebration. The Society's official greetings presented by Mr. Adams were as follows:

"TO THE COUNCIL OF ADMINISTRATION,
THE PRESIDENT AND THE PROFESSORS
OF THE UNIVERSITY OF LOUVAIN:

"DEAR SIRs:

"The opportunity to extend most sincere and cordial greetings to the University of Louvain, its Council, President and Professors, upon the occasion of the celebration of the five hundredth anniversary of the University, more especially through the person of Edward Dean Adams, Fellow of this Society, and eminent engineer, is gratefully seized by the American Society of Civil Engineers.

"Mr. Adams, representing Engineering Foundation and the Engineering Societies Library, two agencies acting in behalf of this Society with others, will carry also to you our best wishes for long continuance of the excellent endeavors which you have put forth and the great success which you have achieved.

"Belgium and its institutions are particularly close to the hearts of the people of the United States of America."

May Meeting on Automobile Hazard

To judge from the spirited discussion at the regular meeting of the Society on May 4, the question of "Automobile Hazard in Cities and Its Reduction" is of active interest to engineers. This paper was presented by its author, William J. Cox, Jun. Am. Soc. C. E., who related his extensive study to deter-

mine the causes for wide fluctuations in the dangers of automobiling as indicated by the varied casualty rates of insurance companies. He showed that this condition could not be explained by the size of city, locality, or number of automobiles, but seemed to bear a rather definite relation to the population density, in terms of miles of paved streets.

The ensuing discussion in general agreed with Mr. Cox's argument, but brought out also the question of traffic control and street planning. This discussion was continuous and active. The following members took part: Messrs. L. G. Holleran, H. M. Lewis, J. K. Finch, George G. Kelcey, R. A. O'Hara, S. Johannesson, J. A. Miller, Jr., and T. Kennard Thomson; also, Mr. W. G. Cole, Safety Engineer of the Metropolitan Life Insurance Company of New York.

Allen Hazen, Vice-President of the Society, presided. The attendance was about 50.

New Assistant Technical Editor

After a full study of the needs of the Editorial Department of the Society, the Standing Committee on Meetings and Publications urged the necessity of appointing a further engineering editor to expedite the proper revision and publication of Society papers. This question was endorsed by the Board of Direction at the Asheville Meeting. The appointee to this position, with the title of Assistant Technical Editor, is Harold T. Larsen, Assoc. M. Am. Soc. C. E.

Mr. Larsen comes from the University of Illinois, where he has been an Instructor in Surveying for the past year. Previously, he has had extensive experience in railroad work, including responsible charge of various construction for the Illinois Central Railroad. He brings to his work an excellent record as a student and instructor, an interest in literature, especially engineering literature, and the highest recommendations of his associates and superiors. His enthusiasm and high technical ability should prove most valuable in his new work.

Light on a Question of Ethics

An inquiry regarding ethical procedure relative to a form of quasi-advertising, recently directed to the Society and answered by its Committee on Professional Conduct, may be instructive to the membership.

The matter involved the circularization by an engineer of a Public Commission's report having to do with work on which he was formerly one of those engaged. With this report he enclosed his professional card, indicating the nature of the private practice he is now carrying on.

In studying this matter, the Society's Committee on Professional Conduct assumed that the connection of various engineers in the department was correctly set forth in the report and that no mis-statements were included. That the copies were sent out after the engineer had severed his connection with the department was not considered of material importance. In the mature opinion of the Committee, "the engineer was within his rights in mailing copies of the commission's report with his personal card included therein". The fact that he had paid for the reports even strengthened his position.

Orville Wright Recipient of Washington Award

A great honor was accorded to Orville Wright, pioneer in aviation, in bestowing on him the Washington Award for 1927. This award is administered by the Western Society of Engineers; the American Society of Civil Engineers is represented on the Commission making the choice. Many notable American engineers have been thus honored during the last half dozen years.

The present award was made on the occasion of the Annual Meeting of the Western Society of Engineers on June 1, 1927. The exact wording is of interest:

THE WASHINGTON AWARD

In Recognition of
Devoted, Unselfish and
Pre-eminent Service in
Advancing Human Progress
Conferred in 1927 upon

ORVILLE WRIGHT

For Fundamental
Scientific Research and
Resultant Successful
Airplane Flight.

Mr. Wright attained fame when he and his brother, Wilbur (since deceased), made remarkable experiments and discoveries in practical aviation. Later, the Wright brothers established a manufactory for airplanes which has since attained National importance. One of the most important of their inventions

was in connection with the system of control which has since become standard for heavier than air flying machines. Of more recent years, Mr. Orville Wright has been a consulting engineer.

The Washington Award thus does deserved honor to a justly noted engineer, in adding to his renown and likewise reflecting dignity upon American engineers and the Engineering Societies represented in this award, of which the Western Society of Engineers, as administrator, takes the most prominent place.

The Shandaken Tunnel

The many engineers who attended the regular Society Meeting on June 1, 1927, to hear details of the Shandaken Tunnel were amply repaid for their effort. This new link in the Water Supply System for the City of New York is 18 miles in length, the longest continuous tunnel yet built. Its purpose is to make the water of the Schoharie Creek as impounded by the new Gilboa Dam available in the next water-shed to the south—the Esopus—from which previous construction gives access to the city through the Catskill Aqueduct.

These and many other details are explained in the paper by Roy W. Gausmann, M. Am. Soc. C. E., in the May, 1927, *Proceedings*. As he is now in Europe, the subject was presented by George G. Honness, M. Am. Soc. C. E., Department Engineer of the New York Board of Water Supply, under whom the work was carried on. Mr. Honness used a number of interesting lantern slides to emphasize the methods of excavation and timbering.

He was followed by other members, including Messrs. A. D. Flinn, W. W. Brush, Lazarus White, and Charles Goodman, who brought out various additional features of the work.

One of the interesting details developed in the meeting was the fact that so many of the staff of engineers originally on the Catskill Aqueduct remained in practice around New York City. By count taken at the meeting, about thirty-five such men were in attendance, including the presiding officer, Robert Ridgway, Past-President, Am. Soc. C. E. The attendance numbered about 130.

Society Appointments

Members have been appointed to act for the Society in the following capacities:

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National Conference on City Planning, Washington, D. C., May 9-11, 1927: Morris Knowles, Harland Bartholomew, Stephen Child, W. W. De Berard, C. W. Leavitt, C. B. Ball, Members, Am. Soc. C. E.

Washington Award Commission: H. J. Burt, M. Am. Soc. C. E.

John Fritz Medal Board of Award: John F. Stevens, President, Am. Soc. C. E.

Committee of Judges for Lincoln Electric Company Prizes: Henry Goldmark, Frederick T. Llewellyn (Alternate), Members, Am. Soc. C. E.

Society for the Promotion of Engineering Education, 35th Annual Meeting at University of Maine, Orono, Me., June 27-30, 1927; H. J. Hughes, M. Am. Soc. C. E.

National Research Council, Division of Engineering and Industrial Research: John R. Freeman, Past-President, Am. Soc. C. E.

How Should Capacities of Water Power Sites Be Stated?

There is probably more confusion with respect to proper units and bases for expressing the capacity of water-power sites than with respect to almost any other resource which vitally affects the prosperity of peoples and nations. A decade ago, when water power was used primarily in connection with local industries, the widespread necessity for uniformity in describing it did not exist. As a result, however, of the great increase in the development of water power, resulting largely from improvements in the art of transmitting electric energy, there are now relatively few homes that do not use electric energy that has been generated in part by falling water.

Moreover, questions regarding water power are rapidly becoming of paramount political importance, as illustrated by activities in cities of the West Coast and elsewhere in connection with municipal ownership; in New York, in connection with the utilization of the St. Lawrence River; and throughout the nation, in connection with the power plant already constructed at Muscle Shoals on the Tennessee River and with the proposed development in Boulder Canyon of the Colorado River.

In order that these various questions may be clearly understood, it is extremely desirable that there be some uniformity in the terms used so that engineers, lay-

men, and politicians can state their views in terms which have a definite meaning that is understood by all.

Watt's Unit Still in Use

Much has happened since Watt, observing horses at work in a British brewery, determined a relation between animal and mechanical power, which he used to express the capacity of his small steam engine for performing work; but Watt's horse-power is still in common use for expressing the capacity of the modern hydraulic turbine. Indeed, the term, "horse-power," is still almost universally used in America in expressing the energy of falling water, although the energy when generated is measured and sold on the basis of an entirely different unit—the kilowatt.

This example illustrates one of the problems that is now being considered by the American Engineering Standards Committee by means of a Sectional Committee composed of about forty engineers who are prominent in the hydro-electric industry, representing twenty-eight organizations. The work is being carried out under the official leadership of the U. S. Geological Survey, with Nathan C. Grover, M. Am. Soc. C. E., and W. G. Hoyt, Assoc. M. Am. Soc. C. E., as Chairman and Secretary, respectively, of the Sectional Committee.

Another question that has been given much consideration by that Committee relates to the best way of expressing the fluctuations in capacity of a water-power site caused by variations in stream flow. A 100 000-kw. steam plant may be operated at full capacity as long as coal or oil is fed under the boilers; but a 100 000-kw. generator in a hydro-electric plant will operate at full capacity only as long as there is sufficient water to run the wheels. In some of the most modern plants the water supply is sufficient to operate the whole plant during only two months in the year. The Committee has had to consider how best to present a picture of the effect of the variable quantity of stream flow on the capacity of the site.

Horse-Power or Kilowatts?

After giving these and many other questions consideration for more than a year the Committee has tentatively decided that the kilowatt should be used instead of the horse-power as the unit for expressing the capacity of water-power sites; that the capacity shown should express the theoretical potential power without deductions for the losses, which

are sure to occur in water-wheels, generators, transformers, etc.; and that the capacity should be stated for two rates of flow—one called the 90%-of-time flow, corresponding to a flow available 90% of the time, and the other called the 50%-of-time flow, corresponding to the flow available one-half the time.

It is the desire of the Committee to have these tentative rules discussed fully and frankly by every one interested in hydraulic development in this country, to the end that they may be so modified that as finally adopted they will represent the best American opinion. This problem is also being taken up internationally through the International Electro-Technical Commission with a view to the adoption of standards, internationally, if possible. Members are invited to submit their views to the Sectional Committee through its officers at the U. S. Geological Survey, Washington, D. C.

Junior Prize Winners for 1927

In accordance with a recently established practice, a number of Society Local Sections have made awards of Junior Membership to graduating students of near-by colleges. A partial list of winners, all graduates of 1927, is given herewith. The applicants for Junior membership who have been awarded this coveted honor for the current year are as follows:

Colorado Section.—William L. Eager, University of Colorado.

San Francisco Section.—Alfred Joseph Orselli, University of California; and John Wais, Jr., Stanford University.

Kansas State Section.—Lloyd William Miller, University of Kansas; and Rush-ton Gardner Cortelyou, Kansas State Agricultural College.

Central Illinois Section.—C. L. Willis and H. B. Rasmussen, University of Illinois.

Iowa Section.—Harold N. Davidson, Iowa State College; and Harold Saxe Houser, University of Iowa.

Pittsburgh Section.—Gabriel Otto Wesenauer, Carnegie Institute of Technology.

Philadelphia Section.—Henry J. Stetina, Drexel Institute.

St. Louis Section.—Thomas Edward Willier, Washington University.

Spokane Section.—George H. Miller, University of Idaho.

Virginia Section.—Richard H. Spessard, Washington and Lee University; and E. B. Lewey, Virginia Polytechnic Institute.

Further prize winners whose applications have yet to be received include:

Philadelphia Section.—Manuel Greenberg, University of Pennsylvania.

Spokane Section.—Edward L. Green, State College of Washington.

Los Angeles Section.—Wesley R. Nelson, University of California; and Edward Browder and Florent H. Bailly, California Institute of Technology.

Virginia Section.—Edward Worthington Selden, University of Virginia; and Harry St. G. Tucker Carmichael, Virginia Military Institute.

Meetings of the Board of Direction

This is an abstract of the notes of the Secretary and subject to approval by the Board of Direction at its next meeting.

The Board met at 11:00 A. M., at the Kenilworth Inn, Asheville, N. C., on April 18 and 19, 1927; President John F. Stevens in the chair; George T. Seabury, Secretary; and present, also, Messrs. Braune, Brillhart, Chevalier, Davison, Dennis, Dewell, Gilman, Hammond, Hatton, Hazen, Hoyt, Huber, Lucas, Morgan, Paul, Ray, Raymer, Sawyer, Spofford, and Taber.

Approval of Minutes

The minutes of the meetings of the Board of Direction held on January 17 and 18, and January 20, 1927, were approved.

The minutes of the meeting of the Executive Committee held on March 29, 1927, were approved and the actions outlined therein were adopted as the action of the Board.

Election of Secretary, Treasurer, and Assistant Treasurer

George T. Seabury was re-elected as Secretary; Otis E. Hovey was re-elected as Treasurer; and W. J. Boucher was re-elected as Assistant Treasurer of the Society.

Future Meetings

The following schedule of future meetings was approved:

1928

Spring Meeting.....Washington, D. C.
Annual Convention.....Buffalo, N. Y.
Fall Meeting.....San Diego, Calif.

1929

Spring MeetingTexas
Annual Convention.....Milwaukee, Wis.
Fall Meeting.....Boston, Mass.

New Student Chapters

Applications for the formation of Student Chapters at Manhattan College and the Louisiana State University were approved.

New Committee on Engineering Employment in Public and Quasi-Public Offices and on Rules Covering Charges

The Committee on Fees and Salaries recommended by the Committee on Aims and Activities, and subsequently authorized by the Board, having as its scope two rather divergent objectives, was divided into two committees:

(1) A Committee on Fees to outline charges and methods of making charges for professional services.

(2) A Committee on Engineering Employment in Public and Quasi-Public Offices.

Committee to Investigate Joint Society Activities

Following a discussion of a letter suggesting that the Society adopt the professional as well as the technical attitude toward the several branches of engineering, a committee was appointed consisting of the Chairman of the Aims and Activities Committee, the Chairman of the Public Relations Committee, and one other, to investigate and report on the aims, activities, finances, constituency, personnel, constitution, etc., of American Engineering Council, and all the agencies in which the Society participates with the four Founder Societies.

Meeting of Executive Committee

This is an abstract of the notes of the Secretary and subject to approval by the Executive Committee at its next meeting.

The Executive Committee met on June 13, 1927, at 10:10 A. M., at Society Headquarters; President John F. Stevens in the chair; George T. Seabury, Secretary; and present, also, Messrs. George S. Davison, Allen Hazen, John C. Hoyt, and Treasurer Otis E. Hovey.

The minutes of the meeting of the Committee held on March 29, 1927, were approved as adopted by the Board. Action was also taken on many matters of Society business preceding the meeting of the Board of Direction at the Annual Convention of the Society.

Local Sections*

Baltimore.—May 24, 1927. Annual Meeting. The following officers were elected: President, Steuart Purcell; Vice-President, C. E. Keefer; Secretary-Treasurer, W. R. Edwards.

Buffalo.—January 11, 1927. A luncheon meeting was held at Hotel Statler. Dr. Edward C. Clark, New York State District Health Officer, spoke on the recent typhoid epidemic at Akron, N. Y. A resolution was adopted in which the Section urged the City of Buffalo to construct sewage disposal plants which will prevent the pollution of its own waters, as well as those of the other cities and towns that depend on Niagara River for a water supply. Attendance 23.

February 9, 1927. The February meeting of the Section was held jointly with the Engineering Society of Buffalo. Mr. John H. Feigel, Assistant City Engineer, gave an address on "Pollution and the Niagara Frontier". Preceding the meeting, the members of the Section met for dinner at which a resolution was passed, instructing the officers of the Section to extend a cordial invitation to the Society to hold its Annual Convention in Buffalo in the summer of 1928. Attendance about 100.

March 8, 1927. At a noon luncheon meeting, Capt. Pierre L. Focardi, Corps of Engineers, United States Army, and Executive of the Buffalo Engineers' Procurement District, spoke on the planning of engineers' supplies for National emergencies. Attendance 21.

April 12, 1927. Annual Meeting. The following officers were elected: President, Lynn L. Davis; Vice-President, Edward P. Lupfer; Secretary-Treasurer, George F. Prong. Charles R. Waters, Division Engineer, New York State Department of Public Works, gave a short talk on "The Rural Highways in the Vicinity of Buffalo." Attendance 25.

Central Ohio.—April 14, 1927. This was a noon-day luncheon meeting at the Chittenden Hotel, Columbus. Matters pertaining to the 1927 Fall Meeting were discussed, and Director Charles H. Paul spoke at length on the subject, making comparison with other meetings. Attendance 25.

April 29, 1927. A special luncheon was called in honor of members of the Board of Public Health Engineers of the Ohio River Basin who were meeting in Columbus. After the business meeting Mr. W. L. Stevenson gave an interesting account of the work the Board of Engineers was accomplishing. Attendance 36.

May 10, 1927. The meeting was held in the Ohio Union Building, Ohio State University, at Columbus, following a dinner. Dean Hitchcock gave a short address and was followed by Director Charles H. Paul, who spoke on "Engineering Developments". President Stevens and Secretary Seabury, who were present as guests, also addressed the Section. The meeting was attended by more than 100 engineers and students.

June 16, 1927. This was a luncheon meeting. After business matters had been transacted, President E. G. Bradbury gave a talk explaining the new

* For list of Local Section Officers, Rules, etc., see 1927 Year Book, p. 104.

County Sewer District Law and the work of the Franklin County Sanitary Engineering Department in extending the sewer and water systems into suburban territory. Attendance 20.

Cincinnati.—April 11, 1927. The Annual Meeting was held in the rooms of the Engineers' Club of Cincinnati. The following officers were elected for the ensuing year: President, Howard B. Luther; Vice-President, Fred W. Morrill; Secretary-Treasurer, Clifford N. Miller. Mr. H. R. Biery, Director of Public Relations, and Mr. J. B. Stewart, General Manager of the Cincinnati Street Railway Company, spoke on the problems of administration and the expansion program of the Company. Attendance 18.

Cleveland.—February 14, 1927. This was a dinner meeting which was addressed by Professor A. H. Blanchard, on the subject of "Traffic Control in Europe and Africa."

April 13, 1927. A business meeting was held in which reports of Committees were presented and other matters of local interest were discussed. Attendance 15.

May 11, 1927. This was a dinner meeting, held in the Rose Room of the Hotel Cleveland. President Stevens, Director Paul, and Secretary Seabury were present as guests. President Stevens gave an address on his experiences as Head of the American Railway Mission to Russia having charge of the operation of Russian railways toward the close of the World War. He held the interest of his audience for an hour. Director Paul gave a vivid picture of the progress of engineering from early times to the present day, showing the part the engineer has played in civilization. Mr. Seabury spoke of the work the Society was carrying on and of plans for future activities. Members of the Student Chapter at the Case School of Applied Science were also present. Attendance 97, including 20 from surrounding cities.

June 8, 1927. Among other business matters it was decided that the Vice-President of the Section should automatically be made Chairman of the Local Sections Committee, with the understanding that he be sent as a delegate to the Local Sections Conference each year. Attendance 11.

The regular meetings of the Section are held on the second Wednesday of each month at noon at the rooms of the Cleveland Engineering Society, Carnegie Hall. Luncheon is served. Evening dinner meetings are held bi-monthly at the same place, the date being subject to change.

Colorado.—April, 1927. A dinner was held at the Denver Athletic Club. Following the business meeting, Director H. W. Dennis, who was a guest of the Section, presented motion pictures and lantern slides which showed in detail the tests on the Stevenson Creek Arch Dam. Attendance 26.

May 9, 1927. This was a joint meeting with the Student Chapter of the University of Colorado. After a dinner, Mr. Fred Farrar, President of the Denver Chamber of Commerce, gave the principal address of the evening entitled "The Engineering and Legal Professions." Mr. John E. Field, Chairman of the Committee in Charge of Awards, then addressed the meeting explaining that the first award was made to Mr. William L. Eager for his paper

entitled "Speeding Up Concrete Road Construction by Increased Efficiency". The Section will award Mr. Eager the prize of Junior Membership in the Society for 1927. Papers by Messrs. Robert A. Finlayson and George M. Williams were highly praised by the Committee. The winning paper was read by the author and illustrated with slides and motion pictures. Attendance 54.

June 4, 1927. The meeting was held at Lake Cheesman, Colo., at the invitation of Mr. R. F. Gray, Superintendent of the Mountain Division of the Denver Municipal Water-Works. During the inspection of the dam, the members were shown both the old and new outlet valves used to control the flow of the South Platte River through the structure according to water rights down the river. The following officers were elected: President, Roy C. Gowdy; Vice-President, Clifford A. Betts; Secretary-Treasurer, Ivan E. Houk. Attendance 28.

Connecticut.—The following officers will serve for 1927: President, Frederick W. La Forge; Vice-President, Joseph P. Wadhams; Secretary-Treasurer, Clarence M. Blair.

Dayton.—May 9, 1927. The members of the Section were guests of the University of Dayton Student Chapter at a dinner meeting held at the University. Professor Bernard T. Schad presented an interesting résumé of the work of the Society for the Promotion of Engineering Education during the past few years, covering a study of the activities and tendencies in American engineering schools. A short address was made by Director Charles H. Paul. Attendance 50.

Detroit.—May 13, 1927. President Stevens, Director Hatton, and Secretary Seabury were present at the meeting. Each of the guests spoke of some phase of the Society's work. Lt. Col. E. J. Dent, Corps of Engineers, U. S. Army, showed lantern slides explaining the progress of the Mississippi flood and the consequent damage, as well as comparing the present with previous floods. Mr. H. C. Ripley spoke briefly of the history of various plans for control of the river. Attendance 50.

Duluth.—April 18, 1927. After the business meeting, Lieut. E. K. Coe, Corps of Engineers, U. S. Army, discussed the "Water Levels of the Great Lakes", at considerable length. Attendance 18.

Iowa.—May 18, 1927. A visit was made by Secretary Seabury to the Section and the State University of Iowa Student Chapter at Iowa City. After a dinner at the Memorial Union the Secretary spoke of the life of President Stevens and of the work of the Society. A round table discussion of Society affairs followed the meeting. Attendance 110.

Kansas City.—The following officers will serve during 1927: President, E. B. Black; Vice-Presidents, A. C. Everham, O. P. Allee; Secretary-Treasurer, Charles A. Haskins.

Los Angeles.—April 13, 1927. The meeting was devoted to a discussion of the oil industry which was opened by Mr. Ralph J. Reed, Chief Engineer, Union Oil Company of California, assisted by Messrs. William Groundwater, Manager of Transportation; L. G. Metcalf, Assistant Manager of Refineries;

and F. W. Lake, Production Superintendent of the Brea Field Department. Attendance 150.

May 11, 1927. After a barbecue dinner, Mr. Ralph W. Stewart, Chief Deputy City Engineer, was introduced and pointed out briefly the efforts of the City to maintain an efficient organization for the testing and examining of materials for use in the construction of buildings, highways, and various public improvements. Mr. Stewart was followed by Mr. T. A. Fitch, Engineer in Charge of Tests, who discussed the test work the City was carrying on, and its development. Mr. J. Wyman Ludlow, Chairman of the Student Relations Committee, made an urgent plea to the members to furnish employment to senior students of the Universities during their summer vacations. At the conclusion of the meeting a visit was made to view the interesting tests which were being conducted under the direction of Mr. Fitch. Attendance 200.

June 8, 1927. Messrs. Wesley R. Nelson, of the Student Chapter of the University of Southern California, and Edward Browder and Florent H. Bailly, of the Student Chapter of the California Institute of Technology, were chosen to receive prizes of Junior Membership in the Society. Dr. Ellerman, of the Mt. Wilson Observatory, addressed the Section. Attendance 158.

Louisiana.—May 4, 1927. The Annual Meeting was held at the residence of Mr. Ole K. Olsen, at New Orleans. The following officers were elected: President, F. A. Muth; First Vice-President, B. H. Grehan; Second Vice-President, Charles M. Kerr; Treasurer, C. N. Bott; Secretary, Ralph H. Mann. Visiting members were called upon for brief remarks. Resolutions were adopted relative to the Mississippi River flood and a committee was authorized to co-operate with the Association of Commerce in furnishing information to correct erroneous impressions caused by press notices concerning flood conditions at New Orleans. Attendance 26.

Philadelphia.—April 13, 1927. After a dinner, President Stevens and Secretary Seabury addressed the members of the Section and their guests. Attendance, 83.

May 2, 1927. The subject of the meeting was "An Evening with Students and Young Engineers". Following the dinner, Director Willard T. Chevalier addressed the Section. In his message to young engineers he pointed out the essentials for success and for advancing the standing of the engineer with the public. Many members of Student Chapters and other young engineers were present. The attendance at the dinner was 74 and at the meeting, 90.

June 6, 1927. Annual Meeting. Following a dinner, Col. J. H. M. Andrews, President of the Engineers Club, and Richard Peters, Jr., Chairman, Philadelphia Section of the American Institute of Mining and Metallurgical Engineers, who were guests of the Section, spoke briefly. The address of the evening was delivered by Director F. O. Dufour on "The Outlook in Engineering." Prizes of Junior Membership in the Society were awarded to Mr. Henry J. Stetina, of the Student Chapter of Drexel Institute, and to Mr. Manuel Greenberg, of the Student Chapter of the University of Pennsylvania. The following officers were elected: President, Charles A. Emerson, Jr.; Vice-President, A. Zane Hoffman; Directors, Isaac S. Walker, and Allen R. Wilson. Attendance 68.

Providence.—May 24, 1927. The following officers were re-elected for the ensuing year: Chairman, Robert L. Bowen; Vice-Chairman, Howard W. Congdon; Secretary-Treasurer, Charles H. Dutton.

Sacramento.—April 5, 1927. This was a joint meeting of the Section, the Architects and Engineers Club, and the Local Chapter of the American Association of Engineers. Du Pont De Nemours and Company's motion picture, "New York's Newest Subway", was shown, the Pacific Gas and Electric Company having furnished both projector and operator. Attendance 47.

April 12, 1927.—Messrs. W. J. O'Connell, Jr., and L. H. Enslow addressed the Section on "Chlorination". Mr. O'Connell explained the object and use of chlorine and Mr. Enslow told of the work being done by the Chlorine Institute. Attendance 24.

April 19, 1927. Mr. L. D. Burlingame, of the Pacific Gas and Electric Company, spoke on "The Operation of Steam Electric Plants". Attendance 22.

April 26, 1927. Mr. George J. Calder, Vice-President of the American Toll Bridge Company and Resident Engineer on the Carquinez Bridge, spoke on "The Design and Construction of the Carquinez Bridge", illustrating his talk with many lantern slides. Attendance 37.

May 10, 1927. Maj. George L. Dillman, Consulting Engineer of San Francisco and First Chief Engineer of the Western Pacific Railway, addressed sixteen members of the Section on "The Law of Ideas".

May 3, 1927. Mr. Ross Pierce, of the Pierce-Bosquit Abstract and Title Company, spoke on "Title Insurance". Attendance 24.

May 12, 1927. Thirty-three couples attended the informal Spring Dance given by the Section.

St. Louis.—April 25, 1927. After the business of the Section had been transacted, Mr. Otto F. Harting addressed the meeting on "Better Foundations for Railroad Crossings". Discussion followed. Attendance 20.

June 27, 1927. A general discussion was held on the proposed Constitution of the Section which is to be voted on by letter ballot. The Junior Membership prize presented by the Section to students at Washington University for the best paper on an engineering subject was also discussed. Attendance 18.

San Francisco.—February 15, 1927. A dinner was held at which 124 members and guests were present. It was announced that the Section would offer awards of initiation fee as Junior in the Society and an engraved Junior badge to a member of the Student Chapter of the University of California and of Stanford University who gave most promise of becoming a valuable and distinguished member of the Society. After the business meeting, George A. Posey, County Surveyor of Alameda County and Chief Engineer of the Estuary Subway, addressed the meeting on "Estuary Subway Between the Cities of Oakland and Alameda, Alameda County, Calif." Attendance 140.

March 5, 1927. One hundred and five members and guests made an inspection trip to Sunset Tunnel now under construction by the City of San Francisco.

March 16, 1927. A dinner was held at the Palace Hotel in honor of President John F. Stevens who gave the principal address of the evening. Short talks were given by Messrs. A. M. Hunt, M. M. O'Shaughnessy, H. D. Dewell, J. D. Galloway and Walter L. Huber. President N. A. Eckart presided and acted as Toastmaster. Attendance 102.

April 19, 1927. A dinner at which 137 members and guests were present preceded the meeting. Reports of committees were presented. Mr. Alfred J. Orselli, of the Student Chapter of the University of California, who had been selected to receive the annual prize offered by the Section to the Chapter, was introduced and spoke briefly. Mr. R. H. McDonnell, a member of the graduating class in the College of Civil Engineering at Stanford University, gave a 5-min. talk on the work being done at the University for the promotion of commercial aviation. Mr. Fred H. Tibbetts, Chief Engineer of the Nevada Irrigation District, addressed the meeting on "Nevada Irrigation District Project." Attendance 150.

Syracuse.—May 2, 1927. At the Annual Meeting the following officers were elected: President, Glenn D. Holmes; Vice-President, Daniel B. O'Brien; Secretary-Treasurer, Warren A. Lyon; Director, Clinton S. Herrick.

Texas.—April 14-16, 1927. The Spring Meeting was held at San Antonio. Mr. S. F. Crecelius presented a paper on the Olmos Dam at San Antonio, of which he is Engineer, and Maj. W. N. Hensley, Jr., Air Officer, 8th Corps Area, U. S. Army, delivered an illustrated address on "Construction and Operation of Dirigibles". Mr. Uel Stephens gave a description of the plant of the San Antonio Sewer Pipe Company and conducted an inspection trip through the plant. A visit to the Olmos Dam was also made. Mr. J. C. McVea discussed the Civil Service Bill, which is to be presented at the Special Session of the Legislature. Mr. W. S. Stanley made a report on "Aims and Scope of Activity of the Proposed Sewage Experimental Station" and Mr. Don Lee gave an account of a report presented by Mr. T. J. Kelley before the State Highway Commission. Director J. H. Brillhart spoke on general Society affairs. Vice-President W. L. Huber and Director H. D. Dewell were guests of the Section. The visitors were entertained by the San Antonio members at a banquet and dance at the Plaza Hotel, as well as at a barbecue dinner at the club house of Martin Wright, at Medina Lake. Attendance 75.

Student Chapters*

University of Dayton Student Chapter.—The Chapter and the Dayton Section held a joint banquet. Mr. F. J. Cellarius, of the Section, acted as Chairman, and Mr. August Cabrinha, President of the Chapter, extended a welcome to the Section. The address of the evening, "Recent Developments in Engineering Education", was given by Professor Bernard T. Schad, Head of the Civil Engineering Department of the University. Director Charles H. Paul also addressed the meeting. Entertainment was given by the University of Dayton Hawaiian Quartet.

* For list of Student Chapters, Officers, etc., see 1927 Year Book, p. 109.

Engineering Societies Library

The services of the Engineering Societies Library are available to all members who wish searches, copies, translations, etc., or advice on technical literature. A collection of modern books is also available for loan to members in North America, at moderate rentals. Correspondence should be addressed to the Director, Engineering Societies Library, 29 West 39th Street, New York, N. Y., who will gladly give information concerning the charges for the various kinds of work. A more comprehensive statement in regard to this matter will be found on pages 126 and 127 of the Year Book for 1927.

Book Notices*

(April 1 to June 30, 1927)

Belastung des Baugrundes. Collected from *Sparwirtschaft*. Wien, Oesterreichischer Normenausschuss für Industrie und Gewerbe, 1927. 78 pp. illus., diagrams, 8 x 6 in., paper. Price not quoted.

This study of the bearing capacity of soils contains the discussions of the Tentative Standards of the Austrian Standards Commission as well as the revised Tentative Standard for tests of bearing capacity which the Commission adopted in December, 1926.

Astronomy: A Textbook. By John Charles Duncan. N. Y., Harper & Bros., 1926. 384 pp., illus., 9 x 6 in., cloth. \$4.00.

Although Professor Duncan's book is intended primarily as a college text for beginners, it gives an excellent general view of the science of the stars, avoiding mathematical discussion and written in an interesting style, well illustrated.

Bemessungsverfahren; Zahlentafeln und Zahlenbeispiele. By B. Löser. Second Edition. Berlin, Wilhelm Ernst & Sohn, 1927. 168 pp., diagrams, tab., 10 x 7 in., paper. 6-r. m.

This handbook for designers of reinforced concrete structures, based on the regulations adopted (1925) by the German Reinforced Concrete Commission, provides the numerical data required and illustrates, by numerical examples, their use.

Bewegungsfugen im Beton- und Eisenbetonbau. By A. Kleinlogel. Berlin, Wilhelm Ernst & Sohn, 1927. 220 pp., illus., diagrams, 10 x 7 in., paper. 17,50 r. m.

The author of this convenient reference book for users of concrete and reinforced concrete, has collected a great number of examples, showing the arrangement and construction of the expansion joints in structures of various kinds, such as high buildings, roofs, silos, bridges, retaining walls, aqueducts, conduits, tanks, pipe lines, and roads.

Bridge Architecture. By Wilbur J. Watson. N. Y., William Helburn, Inc., 1927. 288 pp., illus., 14 x 11 in., cloth. \$17.50.

This book aims to illustrate the art of good bridge design as exemplified by ancient and modern bridges. It contains illustrations of two hundred bridges, grouped chronologically from the earliest times to the present day. The text gives concisely the principal facts about each bridge.

Directory of Cement, Gypsum, Lime, Sand, Gravel, and Crushed Stone Plants, 1927. Comp. by A. A. Tietz. Chic., Cement, Mill and Quarry, 1927. 360 pp., 8 x 6 in., fabrikoid. \$5.00.

Included are alphabetical lists of companies, with equipment, capacity, officers, etc.; geographical lists of mills; directories of brands, officials, and trade associations; and a directory of dealers in machinery and supplies.

Harvard Business Reports, Vol. 2-3. Comp. by the Graduate School of Business Administration. Harvard Univ. Chic. & N. Y., A. W. Shaw Co., 1926-27. 2 vol., 9 x 6 in., cloth. \$7.50 each.

* The statements made in these notices are taken from the books themselves and this Society is not responsible for them. Unless otherwise specified, the books in this list have been donated by publishers.

These cases illustrating business problems show how actual firms dealt with important matters of policy. Business executives may draw hints for the solution of their own difficulties. Commentaries are given with each case.

History of the Sciences in Greco-Roman Antiquity. By Arnold Reymond. N. Y., E. P. Dutton & Co., 1927. 245 pp., 8 x 5 in., cloth. \$2.50.

Known facts are clearly brought forth and divested of an excess of detail, and the historic tendencies of science, its achievements, and failures, are set forth clearly.

Kreislauf des Wassers und Gewässerkunde. By R. Drenkhahn. Berlin und Leipzig, Walter de Gruyter & Co., 1927. 114 pp., illus., diagrams, tab., 6 x 4 in., cloth. 1,50 r. m.

As a very concise introduction to hydrology, this book presents the bare essentials clearly.

Legal Aspects of Zoning. By Newman F. Baker. Chic., Univ. of Chicago Press, 1927. 182 pp., 8 x 5 in., cloth. \$2.50.

The author discusses the attitude of Courts and lawmakers toward important questions in connection with city planning, such as municipal aesthetics, legislation respecting zoning, and the problem of the metropolitan area or region.

Mathematics of Engineering. By Ralph E. Rost. Balt., Williams & Wilkins Co., 1927. 540 pp., 9 x 6 in., cloth. \$7.50.

This book, primarily for naval student officers, is a convenient introduction to mathematics with special attention to the requirements of the engineer; it is intended for mature students.

Nomographie des Bauingenieurs. By Max Mayer. Ber. u. Lpz., Walter de Gruyter & Co., 1927. 111 pp., diagrams, 6 x 4 in., cloth. 1,50 r. m.

This work explains the method and points out the theoretical possibilities of nomography in structural engineering. A collection of nomograms illustrates their practical application.

Old Towpaths; The Story of the American Canal Era. By Alvin F. Harlow. N. Y., D. Appleton & Co., 1926. 403 pp., illus., maps, 9 x 6 in., cloth. \$5.00.

This book provides an interesting account of the rise of the canal in America, of its period of prosperity, and of its decline and practical extinction. There are also chapters on canal engineering and operation, on life on the canal, on travel, on canal lotteries, and other interesting subjects.

Panama Canal. By Darrell Hevenor Smith. (Inst. for Government Research. Service Monographs, No. 44.) Balt., Johns Hopkins Press, 1927. 413 pp., 9 x 6 in., cloth. \$2.50.

This detailed description of the "administrative establishment which exercises control over the maintenance and operation of the Isthmian waterway and its appurtenances both in the Canal Zone and in the United States, including the government of the Canal Zone," gives the history and development of the service, its activities, and organization, including laws, finances, and a bibliography.

Reinforced Concrete Construction, Vol. 1: Fundamental Principles. By George A. Hool. Third Edition. (Engineering Education Series.) N. Y., McGraw-Hill Book Co., 1927. 380 pp., illus., diagrams, tab., 9 x 6 in., cloth. \$3.50.

Most of this edition has been completely rewritten. Chapters have been added on shear and moment considerations in continuous beams, on simple rectangular flat-slab floors, and on column footings.

Report, 1926-1927, of the North Jersey Transit Commission. Jersey City, 1927. 281 pp., illus., pl., diagrams, tab., 9 x 6 in., cloth. Price not quoted. (Gift of Glen S. Reeves, Assoc. M. Am. Soc. C. E., Asst. Chf. Engr.)

The engineering part of this report, confined to the question of commuter traffic between New Jersey and New York City, presents the various plans for connecting the rapid transit systems of New York with the railroads serving New Jersey. The second part of the report is an exhaustive study of methods for financing great public improvements. It is recommended that the proposed rapid transit system be financed by public funds obtained through local benefit assessments.

Seasoning and Preservation of Timber. By Ernest G. Blake. N. Y., D. Van Nostrand Co., 1925. 132 pp., illus., 9 x 6 in., cloth. \$3.50.

This concise treatise on the subject describes the causes of decay, the methods of preserving, drying, and seasoning timber and the preservatives commonly used, especially creosote.

Die Staumauern; Theorie und Wirtschaftlichste Bemessung. By N. Kelen. Berlin, Julius Springer, 1926. 294 pp., illus., diagrams, 11 x 8 in., bound. 39-r. m.

In this treatise on the design of reinforced concrete dams, the author develops working formulas which permit the relevant static and economic factors to be examined very quickly, thus assisting the designer to select the most suitable type of construction for a given situation. Data on a large number of existing arch dams are included.

Treatise on the Mathematical Theory of Elasticity. By A. E. H. Love. Fourth Edition. Lond., Cambridge University Press; N. Y., Macmillan Co., 1927. 643 pp., 11 x 7 in., cloth. \$13.50.

This fourth edition has been revised and extended to cover the researches published since 1914. These include the theory of a rectangular plate, clamped at the edges and bent by pressure applied to one face; the theory of the resistance of a very thin plate to pressure; and the process by which stress-strain relations are deduced from the molecular theory of a crystalline solid.

Vorläufige Richtlinien für die Ausführung von Bauwerken aus Beton im Moor, in Moorwässern und ähnlich Zusammengesetzten Wassern. By Deutsche Ausschuss für Eisenbeton. Berlin, Wilhelm Ernst & Sohn, 1927. 7 pp., 11 x 8 in., paper. 3,30 mk.

This pamphlet gives the specifications of the Deutsche Ausschuss für Eisenbeton covering the construction of concrete structures in swamps and waters containing acids and other substances injurious to concrete.

Wasserdurchlässigkeit von Beton in Abhängigkeit von seinem Aufbau und vom Druckgefälle. By Gustav Merkle. Berlin, Julius Springer, 1927. 66 pp., illus., tab., 10 x 7 in., paper. 6-r. m.

This is a report of a two-year investigation at the Karlsruhe Technical High School, to discover the influence of water pressure and thickness of masonry on the permeability of concrete.

Additions to the Reading Room

Descriptive Bibliography on Oil and Fluid Flow and Heat Transfer in Pipes. By Joe B. Butler, Assoc. M. Am. Soc. C. E. (Univ. of Missouri, School of Mines and Metallurgy, *Technical Series Bulletin*, Vol. 9, No. 4.) Rolla, Mo., Univ. of Missouri, 1926. 62 pp. 9 x 6 in., paper.

This *Bulletin* lists and describes 370 references to published articles and books. The references are arranged chronologically as to year of publication, are fully cross-referenced, and are indexed as to subject, author, and periodical. A short article on the flow of oil in pipes gives formulas, data, and procedure in solving problems.

A Nation Plan: A Basis for Co-Ordinated Physical Development of the United States of America, with a Suggestion for a World Plan. By Cyrus Kehr. N. Y., Oxford University Press, 1926. 210 pp., illus., 10 x 7 in., cloth. \$5.00.

The aim of this book, it is stated, is to point the way to the carrying on of public or civic work, starting with the larger area and planning progressively downward to smaller and smaller features or factors. The dominating consideration is the improvement of communication, a better distribution of increasing population, a better use of land.

Standards Year Book. Compiled by The National Bureau of Standards, Department of Commerce. (Bureau of Standards Miscellaneous Publication No. 77.) Wash., Govt. Printing Office, 1927. 392 pp., illus., diagrams, 9½ x 5½ in., cloth. \$1.00.

This Year Book deals strictly with standards and standardization. In it are correlated the essentials concerning standardization activities with which the Bureau of Standards is in close co-operation. The subject is presented in its entirety.

Current Civil Engineering Literature

Key to Abbreviated References to Publications Indexed*

Abbreviated References.	Publication.	Place.
Am. C. Inst.....	American Concrete Institute, <i>Proceedings</i> (Y.)	Detroit
A. I. E. E.....	American Institute of Electrical Engineers <i>Journal</i> (M.)	New York
A. R. E. A.....	American Railway Engineering Association, <i>Proceedings</i> (Y.)	Chicago
A. S. T. M.....	American Society for Testing Materials, <i>Proceedings</i> (Y.)	Philadelphia
Am. Soc. C. E.....	American Society of Civil Engineers, <i>Proceedings</i> (M.)	New York
Am. Soc. Mun. Impvts.	American Society for Municipal Improvements, <i>Proceedings</i> (Y.)	New York
Am. W. W. Assoc.....	American Water Works Association, <i>Journal</i> (M.)	New York
Am. Wood Pres. Assoc.....	American Wood Preservers Association, <i>Proceedings</i> (Y.)	Baltimore
Ann. P. et C.....	Annales des Ponts et Chaussées (Bi-M.)	Paris
Ann. T. P. Belg.....	Annales des Travaux Publics de Belgique (Bi-M.)	Brussels
Assoc. Ing. Gand.....	Annales de l'Association des Ingénieurs sortis des Écoles Spéciales de Gand (Q.)	Ghent
Bost. Soc. C. E.....	Boston Society of Civil Engineers, <i>Journal</i> (M.)	Boston
Can. Engr.....	Canadian Engineer (W.)	Toronto
Cornell C. E.....	Cornell Civil Engineer (M.)	Ithaca
Dock & Harbour.....	Dock and Harbour Authority (M.)	London
Eng.....	Engineering (W.)	London
Eng. & Contr.....	Engineering and Contracting (W.)	Chicago
Eng. Inst. Can.....	Engineering Institute of Canada, <i>Journal</i> (M.)	Montreal
Eng. N. R.....	Engineering News-Record (W.)	New York
Engrs. Soc. W. Pa.....	Engineers' Society of Western Pennsylvania, <i>Journal</i> (M.)	Pittsburgh
Engr.....	Engineer (W.)	London
Engrs. & Eng.....	Engineers and Engineering, Engineers' Club of Philadelphia (M.)	Philadelphia
Gas und Wasser.....	Gas und Wasserfach (W.)	München
Gen. Civ.....	Le Génie Civil (W.)	Paris
Gesund. Ing.....	Gesundheits Ingenieur (W.)	Munich
Inst. C. E.....	Institution of Civil Engineers Minutes of Proceedings (Q.)	London
Inst. Mun. & Co. Engrs.	Institution of Municipal and County Engineers, <i>Journal</i> (W.)	London
Int. Ry. Cong. Assoc.....	International Railway Congress Association, <i>Bulletin</i> (M.)	Brussels
Land. Arch.....	Landscape Architecture (M.)	Harrisburg
Mech. Eng.....	Mechanical Engineering (M.) <i>Journal of the American Society of Mechanical Engineers</i>	New York
Mil. Engr.....	Military Engineer (Bi-M.)	Washington
Min. & Metal.....	Mining and Metallurgy (M.) American Institute of Mining Engineers	New York
Mun. & Co. Eng.....	Municipal and County Engineering (M.)	Indianapolis
N. E. W. W. Assoc.....	New England Water Works Association, <i>Journal</i> (Q.)	Boston
N. Y. R. R. Club.....	New York Railroad Club, <i>Proceedings</i> (M.)	Brooklyn
Oest. Ing. Arch. Ver.....	Oesterreichischer Ingenieur und Architekten Verein, <i>Zeitschrift</i> (F.)	Vienna
Power.....	Power (W.)	New York
Rev. Gen.....	Revue Générale des Chemins de Fer (M.)	Paris
Ry. Age.....	Railway Age (W.)	New York
Ry. Eng. & Main.....	Railway Engineering and Maintenance (M.)	Chicago
Schw. Bauz.....	Schweizerische Bauzeitung (W.)	Zürich
Sci. Am.....	Scientific American (M.)	New York
Soc. Ing. Civ. Fr.....	Société des Ingénieurs Civils de France, <i>Mémoires et Comptes Rendus</i> (Q.)	Paris
Tech. Gemein.....	Technisches Gemeindeblatt (F.)	Berlin
Ver. deu. Ing.....	Verein deutscher Ingenieure, <i>Zeitschrift</i> (W.)	Berlin
West. Constr. N.....	Western Construction News (F.)	San Francisco
West. Ry. Club.....	Western Railway Club, <i>Proceedings</i> (M.)	Chicago
West. Soc. Engrs.....	Western Society of Engineers, <i>Journal</i> (M.)	Chicago
Zeit. Bau.....	Zeitschrift für Bauwesen (Q.)	Berlin
Z. d. Bauver.....	Zentralblatt der Bauverwaltung (W.)	Berlin

* Y = Yearly; Q = Quarterly; M = Monthly; F = Fortnightly; W = Weekly.

A. Applied Sciences

a. Processes of Calculation

2. Graphical and Nomographical Processes

The Design of a Multiple-Arch System and Permissible Simplifications.* Discussion: A. C. Janni. Am. Soc. C. E. May, '27.

Nomographisches Rechenschema für den belasteten Träger.* (Nomographic Calculations for Loaded Beams.) Groeneveld. Z. d. Bauver. Mar. 23, '27.

3. Stresses and Strains

Continuous Beams. John J. Harty. Bost. Soc. C. E. Mar., '27.

Tests of Corroded Steel Beams Restored with Gunite.* J. R. Shank. Eng. N. R. Apr. 7, '27.

Column Strength Under Eccentric and Shear Loading.* Eng. N. R. Apr. 28, '27.

Stresses Occurring in the Walls of an Elliptical Tank Subjected to Low Internal Pressures.* Wm. M. Frame. Mech. Eng. June, '27.

Calcul des Portiques Composés au Moyen des Equivalents.* (Calculation of Compound Arch Portals by Means of Equivalents.) R. E. Steinsberg. Gen. Civ. Serial beginning April 23, '27.

B. Applied Mechanics

a. Mechanics of Solids (Strength of Materials)

2. Elastic Solids

The Stresses in a Free Prismatic Rod Under a Single Force Normal to Its Axis.* Discussion: William R. Osgood. Am. Soc. C. E. Apr., '27.

The Stresses in a Free Prismatic Rod Under a Single Force Normal to Its Axis. Discussion: Henry D. Dewell. Am. Soc. C. E. May, '27.

4. Riveted Systems

A Recent Development of Rolled Structural Sections.* A. E. Crockett. Engrs. Soc. W. Pa. Feb., '27.

Beitrag zur Methode der Festpunkte.* (Contribution on the Method of Fixed Points.) Sepp Heldinger. Oest. Ing. Arch. Ver. May 13, '27.

Note sur un Procédé Mécanique pour Tracer les Lignes d'Influence des Moments ou des Efforts Tranchants dans les Poutres à Traverses Solidaires et les Poutres Encastées.* (Note on a Mechanical Method of Tracing Influence Lines of Shear Moments or Stresses in Suspended Girder Beams and Fixed Beams.) Bars. Ann. P. et C. Jan., '27.

5. Homogeneous Inelastic Solids

Proportioning Steel Slabs for Column Bases.* R. Fleming. Eng. N. R. June 9, '27.

6. Heterogeneous Solids. (Reinforced Materials)

Distribution of Reinforcing Steel in Concrete Beams and Slabs. Boyd S. Myers. Am. Soc. C. E. May, '27.

Result of Gunite Incasement on Structural Steel. B. C. Collier. Engrs. Soc. W. Pa. Feb., '27.

Encasement of Steel Columns.* J. R. Shank. Can. Engr. May 24, '27.

7. Pulverulent Masses

The Lerida Avenue Slide, Oakland, California.* Chester R. Hunt. West. Constr. N. Apr.

10, '27.

b. Hydraulics

1. Processes of Measurement

Venturi Tube Characteristics.* Discussion: J. E. Gibson, D. E. Davis, Joseph A. Russell, W. S. Pardoe, Bayard F. Snow, and Morrough P. O'Brien. Am. Soc. C. E. Apr., '27.

Experimental Determination of Hydraulic Constants in a Large Aqueduct.* John N. Finlayson. Eng. Inst. Can. June, '27.

The Measurement of Water.* Arthur L. Collins. West. Constr. N. June 10, '27.

Berechnung der Wasserspiegellage.* (Calculation of Water Level Positions.) Böss. Ver. deu. Ing. April 9, '27.

Quelques Remarques Relatives au Tracé des Axes Hydrauliques.* (Some Remarks on the Tracing of Hydraulic Axes.) V. Nicolsky. Assoc. Ing. Gand. Pt. 1, '27.

2. Physical Hydraulics

Pumping Clay Slurry Through a Four-Inch Pipe.* W. B. Gregory. Mech. Eng. June, '27.

Die Leistungsfähigkeit von Fluss-, Bach-, Werkkanal- und Rohrquerschnitten unter besonderer Berücksichtigung der von der Emscher-Genossenschaft in Essen an künstlichen Wasserläufen ausgebauten Emscher und ihrer Nebenbäche.* (The Capacity of River, Stream, Power Canal, and Pipe Cross Sections, with Special Consideration of the Ems, and Its Adjacent Streams Developed into Artificial Water Courses by the Emscher Genossenschaft in Essen.) Friedrich von Bülow. Gesund. Ing. Serial beginning April 2, '27.

Die Staurandversuche von Spitzglass, verglichen mit deutschen Messungen.* (The Orifice Experiments of Spitzglass, Compared with German Measurements.) L. Dorgerloh. Ver. deu. Ing. Serial beginning May 21, '27.

Note sur Diverses Formules Relatives à l'Ecoulement de l'Eau dans les Conduites et les Aqueudes de Grandes Dimensions.* (Note on Various Formulas Relating to the Flow of Water in Large Conduits and Aqueducts.) Huble. Ann. P. et C. Jan., '27.

Recherches Expérimentales sur les Pertes de Charge dans les Conduites Forcées. Détermination de la Section la Plus Economique. (Experimental Researches on the Loss of Head in Pressure Conduits. Determination of the Most Economic Section.) Ch. Hanocq. Assoc. Ing. Gand. Pt. 1, '27.

3. Industrial Hydraulics

Power Features of the Melones Project.* Frank M. Harris. West. Constr. N. Mar. 25, '27.

Water Power and River Regulation in Northern New York.* Hollister Johnson. Cornell C. E. Apr., '27.

Water Powers of Shannon River Being Developed by the Irish Free State.* J. K. Prender-

gast. Eng. N. R. Apr. 7, '27.

- The Glines Canyon Hydro-Electric Development on the Elwha River of the Northwestern Power & Light Co., Port Angeles, Washington.* W. B. McMillan. West. Constr. N. Apr. 10, '27.
- Power Development on Gatinneau River.* Can. Engr. Apr. 12, '27.
- Hanna Chute Hydro Power Development.* Can. Engr. Apr. 26, '27.
- Le Baton Hydro-Electric Power Station.* Eng. May 6, '27.
- Rack Structure and Headgates of Cedar Creek Hydroelectric Station.* W. S. Lee. Mech. Eng. May, '27.
- Specific Characteristics for Hydraulic Turbines.* Arnold Pfau. Mech. Eng. May, '27.
- Fabricating and Testing Penstocks in Europe.* Oren Reed. Eng. N. R. May 12, '27.
- Comparison and Limitations of Various Water-Hammer Theories.* Ray S. Quick. Mech. Eng. May, '27.
- Notes on European Practice in Penstock Design.* Oren Reed. Eng. N. R. May 5, '27.
- Construction Plan and Plant at the Falls of the Ohio.* Eng. N. R. May 12, '27.
- The Holtwood Steam Plant.* F. A. Allner. A. I. E. E. June, '27.
- Bericht über Versuche mit einem Turbinen-Regler der Firma Escher Wyss & Cie., Zürich.* (Report on Experiments with a Turbine Governor from the Firm Escher, Wyss & Cie., Zürich.) E. Braun. Schw. Bauz. Mar. 26, '27.
- Das Hauptwehr der Wasserkraftanlage Zemo-Awtshaly bei Tiflis.* (The Main Weir of the Zemo-Awtshaly Water Power Plant at Tiflis.) Harupa. Ver. deu. Ing. April 9, '27.
- Die Donauwasserkraftnutzung bei Wien. (The Utilization of the Danube Water Power at Vienna.) Ludwig Brandl. Oest. Ing. Arch. Ver. April 29, '27.
- Die Wasserkraftanlage "Stara Reka" der Stadt Karlovo.* (The "Stara Reka" Water Power Plant for the City of Karlovo.) Anton Steinwender. Oest. Ing. Arch. Ver. April 29, '27.
- Der Ausbau des Shannon zur Kraftgewinnung.* (Developing the Shannon for the Production of Power.) Z. d. Bauver. May 4, '27.
- Das Kraftwerk an der Alfenz der Voralberger Zementwerke Lorüns A.-G., Bludenz.* (The Power Plant on the Alfenz for the Voralberger Zementwerke Lorüns A.-G., Bludenz.) A. Sonderegger. Schw. Bauz. Serial beginning May 7, '27.
- Die hydraulischen Modellversuche für das Limmatkraftwerk Wettingen der Stadt Zürich.* (The Hydraulic Model Experiments for the Limmat Power Plant Wettingen, of the City of Zürich.) E. Meyer-Peter. Schw. Bauz. Serial beginning May 21, '27.
- L'Emploi des Turbines-Helices, Systeme Th. Bell, pour les Basses Chutes.* (The Use of Th. Bell System of Hydraulic Turbines for Low Heads.) Alexandre Perrig. Gen. Civ. Mar. 5, '27.
- Considérations sur le Conditionnement des Réservoirs Régulateurs pour Barrages. (Considerations on the Conditioning of Regulating Reservoirs for Dams.) Lassalle. Ann. T. P. Belg. April, '27.
- Les Tuyaux Multiondes Frettés pour Conduites d'Eau à Haute Pression.* (Corrugated Pipe with Bands for High Pressure Water Conduits.) Gen. Civ. May 28, '27.
- 4. Dams**
- Setting Form Points on Constant-Angle Arch Dams.* B. T. Millard. Eng. N. R. Apr. 14, '27.
- Bullards Bar Dam, North Fork of Yuba River, California.* Culbert W. Faries. West. Constr. N. Apr. 25, '27.
- Another Earth Dam Built on Deerfield River.* Lester Gurney. Eng. N. R. Apr. 28, '27.

C. Materials of Construction and General Processes

a. Lime, Cement, Mortar, Concrete, Brick, Bitumin, Timber, etc.

- Testing and Thawing Frozen Concrete. A. M. Bouillon. Mun. & Co. Eng. Mar., '27.
- Water-Ratio Specification for Concrete. Discussion: Thaddeus Merriman. Am. Soc. C. E. Apr., '27.
- The Expansion of Portland Cement Mortar Bars During Distintegration in Sulphate Solutions.* T. Thorvaldson, R. K. Lamour and V. A. Vigfusson. Eng. Inst. Can. Apr., '27.
- Getting Greater Early Strength in Concrete.* Ry. Eng. & Main. Apr., '27.
- Producing Concrete of Uniform Quality. Discussion: William M. Hall. Am. Soc. C. E. May, '27.
- Unit Stresses in Structural Materials. A Symposium. Discussion: John Tucker, Jr., F. E. Turneure, D. B. Steinman, and J. A. Newlin. Am. Soc. C. E. May, '27.
- Water-Ratio Specification for Concrete. Discussion: F. R. McMillan and Stanton Walker. Am. Soc. C. E. May, '27.
- The Logging and Lumbering Interests of the Pacific Northwest. A Symposium. Am. Soc. C. E. May, '27.
- Reinforced Concrete—With Special Reference to Municipal and County Engineering. Edric Tasker. Inst. Mun. & Co. Engrs. May 10, '27.
- Aluminate Cement and Its Properties. Roger L. Morrison. (Paper read before Univ. of Michigan.) Can. Engr. May 17, '27.
- Fineness Modulus No Measure of 28-Day Strength.* H. O. Olsen. Eng. N. R. May 19, '27.
- Prediction of 28-Day Strength of Concrete.* Donald O. Nelson and Frank E. Nichol. Eng. N. R. May 19, '27.
- The Use of Local Materials for Concrete Construction.* Alan Mair Jackson. Eng. Inst. Can. June, '27.
- Water-Cement Ratio and Concrete Mix.* F. R. McMillan. Can. Engr. June 7, '27.
- Die Bedeutung der Kieselsäureumwandlung für den Brennvorgang und für das Verhalten der feuerfesten Steine im Betrieb.* (The Importance of the Silicic Acid Transformation in the Burning Process and in the Behavior of Refractory Brick in Use.) E. Steinhoff. Gas und Wasser. Serial beginning Mar. 12, '27.
- Beton und Torkret-Beton.* (Concrete and Torkret Concrete.) Gesund. Ing. Mar. 26, '27.
- Die Ergiebigkeit verschiedener Zementarten.* (The Efficiency of Different Kinds of Cement.) Richard Grün and Günther Kunze. Z. d. Bauver. Mar. 30, '27.
- Ueber oesterreichische Portlandzemente.* (On Austrian Portland Cements.) Alex. Hasch. Oest. Ing. Arch. Ver. April 1, '27.
- Papier als Werkstoff.* (Paper as a Useful Material.) G. Oehler. Ver. deu. Ing. April 23, '27.

- Die Werkstoffe des Hochbaues.* (Construction Materials.) Amos. Ver. deu. Ing. April 23, '27.
 Kautschuk als Werkstoff.* (Rubber as a Useful Material.) A. Schob. Ver. deu. Ing. April 23, '27.
 Observations sur Une Maladie des Bétons de Climent Fondu. Précautions à Prendre pour Leur Exécution.* (Observations on a Trouble with Aluminum Cement Concretes. Precautions to be Taken in Using Them.) E. Freyssinet and A. Coyne. Gen. Civ. Mar. 12, '27.

b. Metals

- Ueber die Wärmebehandlung von Konstruktionsstählen.* (On the Heat Treatment of Structural Steels.) F. W. Duesing. Ver. deu. Ing. Feb. 26, '27.
 Die Vorgänge nach der Ueberschreitung der Fließgrenze in verdrehten Eisenstäben.* (Behavior of Twisted Iron Rods After Exceeding the Flow Limit.) W. Bader and A. Nadai. Ver. deu. Ing. Mar. 5, '27.
 Kupfer als Werkstoff.* (Copper as a Material.) P. Melchior. Ver. deu. Ing. Mar. 19, '27.
 Struktur der Materie im Lichte der Röntgenstrahlen.* (Structure of Matter in the Light of X-Rays.) M. Polanyi. Ver. deu. Ing. April 23, '27.
 Die Veredlung des Gusseisens.* (The Improvement of Cast Iron.) U. Lohse. Ver. deu. Ing. April 23, '27.
 Anwendung der Röntgenstrahlen in der Schweisstechnik.* (The Application of X-Rays in Welding.) C. Kantner and A. Herr. Ver. deu. Ing. April 23, '27.
 Die technologischen Eigenschaften von Aluminiumkristallen.* (The Technical Properties of Aluminum Crystals.) G. Sachs. Ver. deu. Ing. April 23, '27.
 Die Gefahren der Schwingungsbeanspruchung für den Werkstoff.* (The Dangers of Vibratory Loading for Materials.) Kühnel. Ver. deu. Ing. April 23, '27.
 Eigenschaften kobaltlegierter Schnellarbeitsstähle.* (Properties of Cobalt Alloy High Speed Steels.) W. Oertel. Oest. Ing. Arch. Ver. April 29, '27.
 La Cause de la Déformation de la Coupelle, dans la Rupture des Eprouvetttes Essayées à la Traction.* (The Cause of Deformation of the Cup on the Rupture of Test Pieces Tested by Tension.) Ch. Fremont. Gen. Civ. May 7, '27.

c. Preservation and Use of Materials, Painting, Waterproofing

- The Preservation of Building Stone.* Eng. May 20, '27.
 Wood Preservation—Use of Sodium Fluoride in Steeping Process. Harry E. Sawtell. Bost. Soc. C. E. May, '27.
 Richtlinien für die Herstellung von Rostschutz-Anstrichen. (Guides for the Production of Rust Preventive Coatings.) A. V. Blom. Schw. Bauz. April 2, '27.
 Ingenieur und Anstrichtechnik.* (The Engineer and Painting.) Paul Nettmann. Ver. deu. Ing. May 28, '27.

e. Earthwork. Cubage. Excavating Machinery

- Die Bauarten der Kabelbagger.* (Types of Drag Line Excavators.) F. Riedig. Ver. deu. Ing. Mar. 26, '27.

f. Rock Excavation, Mining, Rock Removal

- Abstracts of Institute Papers. (A. I. M. E.) Min. & Metal. Apr., '27.
 Die Kübelförderung im Bergwerkbetriebe.* (Bucket Hoists in Mining.) Paul Walter. Ver. deu. Ing. May 21, '27.
 Beitrag zum Verhalten von Mauerwerk unter dem Einfluss von Explosionswirkungen.* (Contribution on the Behavior of Masonry Under the Action of Explosives.) Luz David. Z. d. Bauver. Mar. 9, '27.

g. Execution of Works, Specifications

1. Of Masonry

- Die Bauschäden am Dom in Mainz.* (The Structural Damage on the Cathedral in Mainz.) Ludwig Becker. Zeit. Bau. Pt. 2 (Hochbauteil 4), '27.
 Niedersächsische Bauernburgen und Steinwerke.* (Lower Saxon Farm Houses and Masonry Works.) Fritz Boese. Zeit. Bau. Serial beginning Pt. 2 (Hochbauteil 4), '27.
 Die Instandsetzung der St. Lorenzkirche in Nürnberg.* (The Repairing of the St. Lorenz Church in Nürnberg.) Schmitz. Z. d. Bauver. Apr. 27, '27.

2. Of Concrete

- Layout of Concreting Plants for Three Warehouses.* L. C. Hammond. Eng. N. R. May 5, '27.
 Concrete Plant for Terminal Warehouse.* John J. Shea. Can. Engr. June 7, '27.

4. Of Metal

- Evolution of the Steel Skeleton Type of Building. Robins Fleming. Engrs. Soc. W. Pa. Feb., '27.
 Typical Examples of Steel Construction.* Benjamin F. Latting. Cornell C. E. May, '27.
 Designing Steel Structures for Arc-Welded Connections.* A. M. Candy. Engrs. Soc. W. Pa. Feb., '27.
 Girders of Welded Building Yesyed with Hydraulic Jacks.* Gilbert D. Fish. Eng. N. R. June 16, '27.
 Welche Nahtfestigkeiten lassen sich bei den im Behälterbau üblichen Ueberlappungs- und Laschenverbindungen erzielen? (What Seam Strength Can be Obtained with the Overlapping and Butt Strap Riveting Customary in the Construction of Containers?) Max Zebe. Gas und Wasser. Serial beginning Feb. 26, '27.
 Umbau einer Rostfenehalle ohne Betriebsstörung.* (Rebuilding a Roasting Furnace Structure Without Disturbing Operation.) Schw. Bauz. April 2, '27.

5. Of Reinforced Concrete

- Composite Steel and Concrete Frame in Fayetteville Bank.* Walter Atlee. Eng. N. R. May 12, '27.
 New Terminal Warehouse at Montreal.* A. C. Hammond. Can. Engr. May 31, '27.
 Neue Bestimmungen für Eisenbeton. (New Regulations for Reinforced Concrete.) R. Saliger. Oest. Ing. Arch. Ver. April 15, '27.

- Ein Beispiel von Temperaturreissen bei grösseren Eisenbetonbauten.* (An Example of Temperature Cracks in Rather Large Reinforced Concrete Constructions.) Richard Schorlemmer. Z. de. Bauver. April 20, '27.
- Calcul des Cercles de Reservoir en Béton Armé. Procédé Assurant l'Egalité de Travail par mm.* (Calculation of the Circles of Reinforced Concrete Reservoirs. Process to Insure the Equality of Work per Square MM.) Eugene Czyz. Gen. Civ. Mar. 5, '27.
- La Restauration de la Cathédrale de Reims. Réfection de la Toiture au Moyen d'Une Charpente en Eléments de Béton Armé Moulés d'Avance.* (The Restoration of Rheims Cathedral. Reconstruction of the Roof by Means of a Frame with Pre-Cast Reinforced Concrete Elements.) P. Calfas. Gen. Civ. Mar. 26, '27.
- x. Miscellaneous**
- Post-Mortem to Fix Obsolescence Cost.* (Paper read before Nat'l Assoc. Bldg. Owners & Mgrs.) Eng. & Contr. Apr., '27.
- A Method of Construction Control of Scattered Jobs.* M. R. Sumner. Eng. N. R. June 16, '27.

h. Foundations. Bridge Piers and Abutments

- Foundations.* George R. Johnson. Engrs. Soc. W. Pa. Feb., '27.
- Caisson for Montreal Harbor Bridge.* Can. Engr. Mar. 29, '27.
- Building Raised and Leveled After Irregular Settlement.* Eng. N. R. Mar. 31, '27.
- Plenty of Spring in This Pier Fender.* Ry. Eng. & Main. Apr., '27.
- Are Foundations Under Crossings Worth While? O. F. Harting. (From paper read before Main. of Way Club of Chicago.) Ry. Eng. & Main. Apr., '27.
- Buffalo-Fort Erie Bridge Piers Built in Swift Current.* Reed W. Cady. Eng. N. R. Apr. 21, '27.
- Dig 210-Ft. Foundation Wells for Cleveland Terminal.* Frank W. Skinner. Ry. Age May 14, '27.
- Sinking Building Underpinned by Unusual Procedure.* E. D. Graffin. Eng. N. R. June 16, '27.
- Machine à Forer des Puits Bétonnés pour Foundations. Systèmes Stern.* (Stern System of Drilling Machine for Boring Concreted Holes for Foundations.) D. S. Mitrani. Gen. Civ. April 2, '27.
- Calcul de la Stabilité des Massifs de Foundation Enterrés.* (Calculation of the Stability of Imbedded (Buried) Massive Foundations.) Henri Dumontier. Gen. Civ. May 7, '27.

i. Coffor-dams

- Die Fangedämme beim Bau der Staustufe im Donaukachel bei Passau.* (The Cofferdams in the Construction of the Dam Section in the Kachel Part of the Danube at Passau.) Karl Hetzel. Z. de. Bauver. Mar. 2, '27.

j. Piles and Pile-Driving

- Steel Sheetpiling Used in Repair of Bridge Approaches.* Eng. N. R. Apr. 28, '27.

k. Tunnels and Tunneling-Shield

- New Cascade Tunnel for Great Northern Ry.* J. C. Baxter. West. Soc. Engrs. Feb., '27.
- Second Deep Delivery Tunnel for Catskill Aqueduct Water.* Eng. N. R. Mar. 31, '27.
- Note on the Construction of the Cinquantenaire Tunnel on the Schaerbeek-Hal Line of the Belgian State Railways. L. Pêche. Inst. Ry. Cong. Assoc. Mar., '27.
- Ventilation System for Holland Vehicular Tunnel.* W. H. Rex, Jr. Eng. & Contr. Apr., '27.
- Holland Vehicular Tunnel Nearing Completion.* W. H. Rex, Jr. Can. Engr. Apr. 12, '27.
- Operation Through the St. Claire Tunnel.* Walter D. Hall. Ry. Age Apr. 23, '27.
- Chicago's New Intake Tunnel.* Eng. & Contr. (W. W.) May, '27.
- The Shandaken Tunnel.* R. W. Gausmann. Am. Soc. C. E. May, '27.
- Construction Methods on the Moffat Tunnel. Discussion: T. Kennard Thomson and H. F. Dunham. Am. Soc. C. E. May, '27.
- Dragline Mucking in Rock Tunnel for New Chicago Intake.* Eng. N. R. May 26, '27.
- Studies and Methods Adopted for Ventilating the Holland Tunnels.* Eng. N. R. June 9, '27.

l. Construction Machinery and Tools—Drainage

- Steam Shovel Work in Tropical South Africa.* R. Desmond Forrester. Engr. June 3, '27.

D. Highways

a. Location

- Economic and Engineering Problems of Highway Location. Discussion: Fred Lavis and George E. Goodwin. Am. Soc. C. E. Apr., '27.
- Cuba Begins New Central Highway 700 Miles Long.* E. Ruiz Williams. Eng. N. R. Apr. 7, '27.
- Economic and Engineering Problems of Highway Location. Discussion: H. C. Boyden and John P. Hallihan. Am. Soc. C. E. May, '27.

c. Construction

- Gravel As a Road Surfacing Material. W. G. Parrett. (Paper read before Purdue Road School.) Mun. & Co. Eng. Mar., '27.
- A Survey of the Paving Situation. J. H. Neeson. Engrs. & Eng. Serial beginning Mar., '27.
- Strengthening Highway and City Street Foundations to Meet the Increase in Motor-Bus and Truck Traffic. Engrs & Eng. Mar., '27.
- Stability of Pavements Under Traffic. Prevost Hubbard and F. C. Field. (Paper read before Asphalt Paving Conference.) Can. Eng. Mar. 29, '27.
- Crusher Run Stone as Concrete Aggregate. J. G. Ross and M. F. MacNaughton. Can. Engr. Mar. 29, '27.

- Travel Notes on Highway Building in French Algeria.* W. W. Crosby. Eng. N. R. Mar. 31, '27.
- Bituminous Paving Mixture Researches.* W. J. Emmons. (Paper read before Annual Asphalt Pav. Conference.) Eng. & Contr. (R. & S.) Apr., '27.
- Surface Treatment of Gravel and Stone Roads.* C. C. Newsom. (Paper read before Purdue Univ.) Eng. & Contr. (R. & S.) Apr., '27.
- Comments on Concrete Road Construction. A. N. Johnson. (Paper read before Univ. of Michigan.) Eng. & Contr. (R. & S.) Apr., '27.
- North Carolina Bituminous Earth Roads. Discussion: Carlton N. Conner. Am. Soc. C. E. Apr., '27.
- Recent Developments in Concrete Pavements.* Discussion: Elmer G. Hooper, T. M. Ripley, W. C. Hammatt, R. W. Crum, and Carlton N. Conner. Am. Soc. C. E. Apr., '27.
- Survey of Present Paving Situation in New York. R. A. MacGregor. Engrs. & Eng. Apr., '27.
- Notes on Bituminous Macadam Pavements. Squire E. Fitch. (Paper read before Fifth Annual Asphalt Pav. Conference.) Can. Engr. Apr. 5, '27.
- Effect of Sand Bulking on Mix. A. T. Goldbeck. (Paper read before Nat'l Crushed Stone Assoc.) Can. Engr. Apr. 12, '27.
- Methods of Assessment for Street Paving at Flint, Mich.* Harry McClure. Eng. N. R. Apr. 14, '27.
- Los Angeles Builds Superhighway to Ocean Beach.* John C. Shaw. Eng. N. R. Apr. 14, '27.
- Practical Highway Engineering Methods. Otto S. Hess. (Paper read before Purdue University.) Can. Engr. Apr. 19, '27.
- Theory of Spacing Cross-Joints in Concrete Roads. Roy M. Green. Eng. N. R. Apr. 21, '27.
- Notes on the Geology of Some Rocks Used in Highway Engineering. Donald G. Bevan. Inst. Mun. & Co. Eng. Apr. 26, '27.
- Notes on the Acquisition of Land for Roadworks. H. Stapleton. Inst. Mun. & Co. Engrs. Apr. 26, '27.
- Six Counties Combine to Build 155-Mile Coastal Highway.* F. M. Garnett. Eng. N. R. Apr. 28, '27.
- The Trend of Highway Design.* A. G. Bruce and R. D. Brown. (From *Public Roads*.) Eng. & Contr. (R. & S.) May, '27.
- Recent Developments in Concrete Pavements. Discussion: H. C. Boyden, C. Raymond Hulsart, and Edward Godfrey. Am. Soc. C. E. May, '27.
- Paving Along Street Railway Tracks. J. I. Catherman. (Paper read before Ill. Soc. Engrs.) Eng. & Contr. (R. & P.) May, '27.
- Control of Road Building Materials. H. S. Mattimore. (Paper read before Am. Road Bldrs. Assoc.) Can. Engr. May 3, '27.
- Experiments in Crack Regulation in Concrete Roads.* Charles E. Turnbull. Eng. N. R. May 12, '27.
- Causes of Concrete Pavement Deterioration. J. S. Bixby. (Paper read before Assoc. Highway Officials.) Eng. N. R. May 19, '27.
- Raising and Widening West Market Street, Warren, Ohio.* W. S. Harvey. Eng. N. R. May 19, '27.
- Voidage in Asphalt Paving Mixtures. Gene Abson. (Paper read before Asphalt Pav. Conference.) Can. Engr. May 24, '27.
- Llanfair-Talhaiarn-Llansannan Road Works, North Wales.* George Kenyon. Inst. Mun. & Co. Engrs. May 24, '27.
- Bay Shore Underpass at South San. Francisco.* West. Constr. N. May 25, '27.
- Surface Treatment of Gravel Roads. C. C. Newsom. (Paper read before Purdue Univ.) Can. Engr. May 31, '27.
- Aggregates for Highway Construction. A. S. Rea. (Paper before Nat'l Sand and Gravel Assoc.) Can. Engr. May 31, '27.
- Developing Traffic-Bound Roads at Low Cost.* Harry J. Kirk. Eng. N. R. June 2, '27.
- Quality Control of Concrete for Pavements and Foundations, Including a Brief Review of the Impact Studies of the Bureau of Public Roads.* F. H. Jackson. Engrs. & Eng. May, '27.
- Studies of the Pennsylvania Department of Highways on Pavement Slabs and Strengthening Foundations.* P. M. Tebbis. Engrs. & Eng. May, '27.
- Concrete Roads—A Problem in Foundation Engineering.* Charles Terzaghi. Bost. Soc. C. E. May, '27.
- Block Stone Base for Asphalt Road, New South Wales.* W. W. Parkhurst. Eng. N. R. June 9, '27.
- Low Cost Improved Roads. C. N. Conner. (Paper read before Highway Research Board.) Eng. & Contr. (R. & P.) June, '27.
- Constructing the Garden Highway Across the Delta Islands of the Sacramento River, California.* West. Constr. N. June 10, '27.
- Neue billige Verfahren im modernen Landstrassenbau und deren finanzielle Auswirkung. (New Cheap Methods in Modern Road Construction and Their Financial Evolution.) Anton Preslicka. Oest. Ing. Arch. Ver. Mar. 18, '27.
- Die Bedeutung der Strassendecke, insbesondere der Steindecke, in gesundheitlicher Beziehung. (The Importance of the Pavement, Especially Stone Paving from a Sanitary Viewpoint.) Knipping. Gesund. Ing. April 16, '27.
- Die Strasse im Städtebau.* (The Street in City Building.) Ewald Genzmer. Gesund. Ing. April 16, '27.
- Profilen Traverses de Routes Récentes et de Voies pour Automobiles, en France et à l'Etranger.* (Cross Section Profiles of Recent Roads and Automobile Highways, in France and Abroad.) Leon Moissenet. Gen. Civ. May 14, '27.

d. Maintenance

- Gravel Road Maintenance. Allen M. Williams. (Paper read before Univ. of Michigan.) Eng. & Contr. (R. & S.) Apr., '27.
- Prüfung und Beurteilung von Strassenschotter und Pflastersteinen.* (Testing and Rating Macadam and Paving Stones.) E. Gaber. Z. d. Bauver. May 25, '27.

Principes d'Administration des Routes d'après les Expériences du Territoire de la Sarre.* (Principles of Road Administration from Experiences in the Sarre Territory.) Fernand Campus. Assoc. Ing. Gand. Pt. 1, '27.

g. Machinery and Tools

Alberta Bituminous Sand for Highways.* S. E. Ellis. (By permission of Dept. of Mines, Ottawa.) Can. Engr. May 24, '27.
Die Maschinen des Strassenbaues.* (Road Building Machinery.) E. Neumann. Tech. Gemein. Serial beginning April 5, '27.

h. Vehicles, Automobiles, Traffic

City Traffic Problems. William B. Powell. Engrs. & Eng. Mar., '27.
Untying the Traffic Knot. Sidney D. Waldron. Mun. & Co. Eng. Mar., '27.
Automobile Hazard in Cities and Its Reduction.* William J. Cox. Am. Soc. C. E. Apr., '27.
The Highway Engineer and Safety Traffic. E. W. James. (Paper read before Univ. of Michigan.) Eng. & Contr. (R. & S.) Apr., '27.
Die Kraftwagenbahnstrasse Köln-Düsseldorf.* (The Cologne-Düsseldorf Motor Truck Road.) Heinrich Cassinone. Oest. Ing. Arch. Ver. Mar. 18, '27.
Autostrasse oder Autobahn. (Auto-Roads or Auto-Ways.) Ph. Rappaport. Tech. Gemein. Apr. 5, '27.
Hirschstrasse, Münsterplatz und Frauenstrasse in Ulm im Wandel des Strassenverkehrs.* (Hirschstrasse, Münsterplatz and Frauenstrasse in Ulm in the Change in Street Traffic.) Klaiber. Z. d. Bauver. Apr. 13, '27.

x. Miscellaneous

Wiens Strassenbau und Strassenerhaltung in den Jahren 1926 und 1927. Rückblick und Ausblick.* (Road Construction and Maintenance in Vienna in 1926 and 1927. Past and Future.) Rudolf Münster. Oest. Ing. Arch. Ver. Mar. 18, '27.

E. Bridges, Viaducts, and Arches

b. Iron and Steel Bridges and Viaducts

Erection of Steubenville Bridge Introduces Novel Problems.* Ry. Age Apr. 2, '27.
Concrete-Cased Steel Viaduct with Special Expansion Joints.* Eng. N. R. Apr. 7, '27.
Counterweighted Cables Raise 433-Ft. Spans to High-Level Cantilever Bridge.* Charles F. Goodrich. Eng. N. R. Apr. 28, '27.
Notes on the Impact Effect on Metal Bridges.* R. Desprets. Int. Ry. Cong. Assoc. May, '27.
Erection of Girder Span Imposes Serious Problem.* Ry. Eng. & Main. May, '27.
Unusual Construction Methods on Carquinez Straits Bridge.* Eng. & Contr. (R. & S.) May, '27.
Five Missouri River Highway Bridges in South Dakota.* J. E. Kirkham. Eng. N. R. May 5, '27.
Designing the Carquinez Cantilever Bridge.* D. B. Steinman. Eng. N. R. May 12, '27.
Erecting Long Bridge Spans Over Niagara River.* Eng. N. R. May 19, '27.
Doubled decking the Havre de Grace Highway Bridge.* John N. Mackall. Eng. N. R. June 2, '27.
A Lift Span of Unusual Design.* Ry. Age June 11, '27.
Moving the 440-Ft. Truss Spans of Sixth Street Bridge, Pittsburgh.* D. T. Jerman. Eng. N. R. May 26, '27.
Newport Interstate Highway Bridge Across Columbia River, Washington and Idaho.* Joseph A. Murphy. West. Const. N. June 10, '27.
Use Electric Welding Process to Strengthen Bridge.* Ry. Age June 18, '27.
Die neue Eisenbahnbrücke über die Elbe bei Hämerten.* (The New Railway Bridge Over the Elbe at Hämerten.) Zwach. Ver. deu. Ing. Apr. 16, '27.
Le Nouveau Pont-Route Métallique de Pirmil sur la Loire, à Nantes.* (The New Pirmil Metallic Highway Bridge Over the Loire at Nantes.) Ch. Dantin. Gen. Civ. Apr. 9, '27.

c. Stone Bridges and Viaducts

Der Umbau des "Viaduc du Day" auf der Linie Lausanne-Vallorbe der S. B. B.* (Rebuilding the "Viaduc du Day" on the Lausanne-Vallorbe Line of the Swiss State Railway.) Schw. Bauz. Serial beginning Apr. 23, '27.

d. Concrete and Reinforced Concrete Bridges and Viaducts

Five Highway Bridges Across the Van Duzen River, California.* Harold B. Hammill. West. Constr. N. Mar. 25, '27.
Long Concrete-Arch Road Bridge Over Minnesota River.* Eng. N. R. Mar. 31, '27.
Old Iron Viaduct Converted to Reinforced-Concrete Structure.* John F. Hough. Eng. N. R. Apr. 21, '27.
Construction of Knox Bridge, Montreal.* J. F. Brett. (From *Municipal Improvements*.) Can. Engr. May 17, '27.
Eine Zweigelenkrahmenbrücke aus Eisenbeton für die Kleinbahn Erfurt-Nottleben.* (A Double Hinged Panel Bridge of Reinforced Concrete for the Erfurt-Nottleben Narrow Gauge Railroad.) Sell. Z. d. Bauver. Apr. 20, '27.
Pont Supérieur en Béton Armé sur la Ligne de Culoz à Modane en Gare de Modane-Fourneaux.* (Bridge Superstructure of Reinforced Concrete on the Culoz-Modane Line at Modane-Fourneaux Station.) Oudotte. Rev. Gen. Mar., '27.
Ponts en Arc en Béton Armé, Système Ljungberg.* (Ljungberg System Reinforced Concrete Arch Bridges.) O. de Stapelmohr. Gen. Civ. Mar. 5, '27.
Pont en Béton Armé sur le Mississippi à Saint-Paul (Etats-Unis).* (Reinforced Concrete Bridge Over the Mississippi at St. Paul, United States.) P. Caufourier. Gen. Civ. May 7, '27.

f. Suspension Bridges. Transfer Bridges

- Quantities of Materials and Costs Per Square Foot of Floor for Highway and Electric-Railway Long-Span Suspension Bridges.* Discussion: Allston Dana, I. Oesterblom, Francis P. Witmer, Leon S. Moisseff, V. A. Eberly, Horatio P. Van Cleve, and Wendell P. Brown. Am. Soc. C. E. Apr., '27.
- The Theory of the Stiffened Suspension Bridge.* Eng. Apr. 29, '27.
- Quantities of Materials and Costs Per Square Foot of Floor for Highway and Electric-Railway Long-Span Suspension Bridges. Discussion: William G. Grove. Am. Soc. C. E. May, '27.
- The Eye-Bar Cable Suspension Bridge at Florianopolis, Brazil.* D. B. Steinman and William G. Grove. Am. Soc. C. E. May, '27.
- Freitragender Vorbau einer Kettenbrücke in Amerika.* (Overhang Construction of a Chain Bridge in America.) R. Bernhard. Z. d. Bauver. Mar. 16, '27.
- Versteifungsträger und Fahrbahn der Delawarebrücke in Philadelphia.* (Stiffener Beams and Roadway of the Delaware Bridge in Philadelphia.) Rudolf Bernhard. Ver. deu. Ing. Serial beginning Mar. 26, '27.
- Der Ueberbau der Delaware-River-Brücke in Philadelphia.* (The Superstructure of the Delaware River Bridge in Philadelphia.) Karl Möhringer. Oest. Ing. Arch. Ver. April 15, '27.
- Le Pont Suspendu de Philadelphie (Etats-Unis).* (The Philadelphia (U. S. A.) Suspension Bridge.) P. Caufourier. Gen. Civ. Mar. 19, '27.

g. Swing, Bascule, Lift, Floating, Oscillating Bridges, Traveling Cranes

- New Latch for Bascule Bridges.* C. E. Paine. Can. Engr. June 7, '27.
- Die Kabelkrane.* (Cable Cranes.) J. M. Bernhard. Ver. deu. Ing. May 14, '27.
- Le Pont Tournant Dit "Des Ecluses" dans le Port Fluvial de Strasbourg.* (The Swing-Bridge, Called "Des Ecluses," in the Strasbourg River Harbor.) Gen. Civ. Mar. 12, '27.
- Pont-Rails Levant, de 56 Mètres d'Ouverture, sur la Meuse, à Rotterdam (Pays Bas).*(Railway Lift Bridge with a Span of 56 Meters, Over the Meuse at Rotterdam, Netherlands.) A. Bijls. Gen. Civ. May 21, '27.

h. Computation, Tests, etc.

- Note on the Secondary Stresses in Lattice Girders.* Int. Ry. Cong. Assoc. Apr., '27.

F. Inland Waters and Waterways**a. Natural Waterways (General Articles)**

- The Mastery of the Ohio River.* Edmund L. Daley. Mil. Engr. May-June, '27.

b. Canals (General Articles)

- The New York State Barge Canal and Its Operation. Discussion: Frank L. Bolton. Am. Soc. C. E. Apr., '27.
- The New York State Barge Canal and Its Operation. Discussion: Roy G. Finch. Am. Soc. C. E. May, '27.
- Bauzeit und Arbeitsplan für Kanalbauten.* (Construction Time and Plan of Work for Canal Construction.) H. Behring. Ver. deu. Ing. Apr. 9, '27.
- Le Canal de Marseille au Rhône. Inauguration du Souterrain du Rove. Etat Actuel des Travaux du Canal.* (The Marseille Canal to the Rhône. Inauguration of the Rove Tunnel. Present Status of the Work on the Canal.) Gen. Civ. Apr. 23, '27.

c. Regulation of Waterways—Volume of Discharge, Freshets, Floods, Soundings

- Flood Danger in the Colorado Delta—Channel Construction the Only Safeguard.* Paul M. Entenman. Eng. N. R. Mar. 31, '27.
- Probability of Flood Flows.* F. G. Switzer. Am. Soc. C. E. Apr., '27.
- Board Reports on Los Angeles Flood Control Projects. Eng. N. R. Apr. 7, '27.
- Colorado River Control in Palo Verde Valley.* Spencer E. Webb. West. Constr. N. Apr. 25, '27.
- The Mississippi River Flood Problem.* Robert P. Howell. Mil. Engr. May-June, '27.
- Flood Control in the Miami Valley of Ohio.* C. S. Bennett. Am. W. W. Assoc. June, '27.
- Mississippi Problem Outlined by Chief of Engineers. Eng. N. R. June 16, '27.
- Die grossen Schadenhochwässer der letzten Jahre und ihre Ursachen.* (The Great Floods of the Past Years and Their Causes.) Soldan. Z. d. Bauver. Serial beginning May 11, '27.

d. Diverting Dams, Locks, Lifts, Elevators, Inclined Planes

- 110-Foot Sector Gate Dam at Court Street, Rochester, N. Y.* Carl C. Cooman. Cornell C. E. Mar., '27.

- The Mastery of the Ohio River.* Edmund L. Daley. Mil. Engr. May-June, '27.

h. Boats, Barges

- Les Engins de Transports Fluviaux au Congo.* (Engines for River Boats in the Congo.) Robert Dauwe. Assoc. Ing. Gand. Pt. 1, '27.

j. River and Lake Ports, Equipment

- The Pier District Improvement Scheme, Dover.* F. V. How. Inst. Mun. & Co. Engrs. June 7, '27.

k. Utilization of Inland Waterways, Freight, Capacity

- Der Massentransport zu Wasser.* (Mass Transportation by Water.) U. R. Ruegger. Schw. Bauz. Mar. 12, '27.
- La Situation Actuelle de la Navigation Intérieure en Allemagne.* (The Present Status of Internal Navigation in Germany.) Ann. P. et C. Jan., '27.

G. Maritime Works

c. Vessels and Maritime Navigation, Lighthouses, Buoys, Various Signals

- Notes on the Design of Coasters.* J. Douglas Calder. Eng. (Paper read before Inst. Naval Archts.) Apr. 15, '27.
 The Future of Sailing Vessels Fitted with Auxiliary Motors.* C. Blom. (Paper read before Inst. Naval Archts.) Eng. Apr. 22, '27.
 Entwurf für das Schiffshebewerk bei Niederfinow.* (Design for the Ship Elevator at Niederfinow.) Ellerbeck. Ver. deu. Ing. May 28, '27.

d. Roads and Outer Harbors. Dikes and Jetties. Breakwaters

- Flussmündungen mit Barrenbildung an der baltischen Ostseeküste.* (River Mouths with Bar Formation on the East Baltic Coast.) Egon Leppik. Z. d. Bauver. Serial beginning Pt. 2, '27.

f. Maritime Rivers and Canals. Bank Protection

- Le Présumé "Mécanisme des Alluvions" et les Passes de l'Escaut Maritime.* (The Alleged "Mechanism of Alluvium" and the Channels in the Escaut Maritime.) Tobie Claes. Assoc. Ing. Gand. Pt. 2, '27.
 Etude sur la Formation de l'Escaut Maritime et des Rivières à Marée de Belgique. Leur Entretien et Leur Amélioration. (Study on the Formation of the Escaut Maritime and the Tidal Rivers of Belgium. Their Maintenance and Their Improvement.) R. Haenecour. Ann. T. P. Belg. Serial beginning Apr., '27.

h. Wharves, Mooring Buoys, Harbor Equipment

- Manchester Docks.* Dock & Harbour Apr., '27.
 Dock Extensions at Liverpool.* Engr. Apr. 8, '27.
 Construction of Pier B-C, Vancouver.* A. D. Miller. Can. Engr. Apr. 19, '27.
 King George's Dock, Calcutta.* Eng. Apr. 29, '27.
 The New Deepwater Quay at the Port of Dublin. J. Mallagh. (Paper read before Inst. C. E. Ireland.) Dock & Harbour May, '27.
 The New Railway Pier at the Port of Vancouver.* Dock & Harbour May, '27.
 The Equipment of Ports of Call.* W. Brouerius Meyboom. Dock & Harbour Serial beginning June, '27.
 Der Wettbewerb für die Hafenbrücke in Kopenhagen.* (The Competition for the Harbor Bridge in Copenhagen.) Ver. deu. Ing. Feb. 26, '27.

i. Harbors (General Articles)

- The Port of Karachi.* T. H. Coad. Dock & Harbour Apr., '27.
 The New Port of Corpus Christi, Texas.* Vance Griffith. Dock & Harbour Apr., '27.
 The Port of Macao.* Dock & Harbour Apr., '27.
 New Gulf Harbor and Port at Corpus Christi, Texas.* Eng. N. R. Apr. 7, '27.
 The Port of Wellington, New Zealand.* James Marchbanks. Dock & Harbour May, '27.
 The Port of San Francisco.* Wm. A. Sherman. Dock & Harbour June, '27.
 Development of the Port of Auckland.* Dock & Harbour June, '27.
 The Port of Stettin.* Alfred Berger. Dock & Harbour June, '27.
 Der Freihafen von Stockholm.* (The Free Port of Stockholm.) Saller. Z. d. Bauver. May 11, '27.

H. Railroads. Street and Interurban Railways. Automobiles. Aeronautics

a. Railroads

1. General Articles

- The Survey and Construction of the Khyber Railway.* Gordon Risley Hearn. Inst. C. E. Vol. 222, Pt. 2, 1925-26.
 The Construction of the Mountain Section of the Many Peaks to Northern Burnett Railway, Queensland.* Alfred Edward Tuffey. Inst. C. E. Vol. 222, Pt. 2, 1925-26.
 The Khyber Railway.* Victor Bayley. Inst. C. E. Vol. 222, Pt. 2, 1925-26.
 The New Morden Extension and Kennington Loop Lines.* (From *The Railway Engineer*.) Int. Ry. Cong. Assoc. Mar., '27.
 Southern Pacific of Mexico Finishes Main Line to Guadalajara.* Raymond Chambers. Ry. Age Apr. 9, '27.
 South Manchuria Railway—A Line of Destiny.* Adachi Kinnosuke. Ry. Age Apr. 23, '27.
 Zur Vollendung des Umbaus der linksufrigen Zürichseebahn im Gebiete der Stadt Zürich, am 1. März, 1927.* (Completion of the Rebuilding of the Left Shore Zurich Lake Railway Within the Limits of the City of Zurich.) Schw. Bauz. Mar. 5, '27.
 Das Altessen von zwei abgebrochenen Bauwerken der Berliner Stadtbahn.* (Junk Iron from Two Dismantled Structures of the Berlin Municipal Railway.) J. Kühnke. Z. d. Bauver. April 6, '27.
 Les Chemins de Fer Allemands en 1925-1926.* (The German Railroads in 1925-1926.) Rev. Gen. Mar., '27.
 Résultats d'Exploitation des Chemins de Fer Fédéraux Suisses pour 1925 et Prévisions Budgétaires pour 1927.* (Operating Results for Swiss Federal Railways in 1925, and Budget Provisions for 1927.) Rev. Gen. Apr., '27.
3. Roadbed (Grading Construction Work)
 Heavy Filling Projects Present Unusual Problems.* Ry. Age May 21, '27.
 Why Gravel for Ballast Should be Carefully Selected.* F. J. Stimson. (Abstract of paper read before Nat'l Sand & Gravel Assoc.) Ry. Eng. & Main. May, '27.
4. Track
 Reinforced Concrete Sleepers (Gaulin's Pattern).* Weiler. (From *L'Industrie des Voies ferrées et des Transportes Automobiles*.) Int. Ry. Cong. Assoc. Mar., '27.

- Better Care of Treated Ties.* R. S. Belcher. (From paper Main. of Way Club of Chicago.) Ry. Eng. & Main. Apr., '27.
- Building a Second Track in Short Time.* R. W. E. Bowler. Ry. Eng. & Main. Apr., '27.
- The Development and Practice of Modern Maintenance on the Lehigh Valley Railroad.* G. A. Phillips. Cornell C. E. Apr., '27.
- What Can be Done to Improve the Quality of Steel Rails. C. W. Gennet, Jr., (Paper read before N. E. Ry. Club.) Ry. Age Apr. 16, '27.
- N. Y. C. Eliminates Grade Crossings Under Heavy Traffic.* Ry. Age Apr. 30, '27.
- Rail Wear Cut 80 Per Cent by Norfolk & Western Flange Oiler.* Ry. Eng. & Main. May, '27.
- Oiling Reduces Rail and Flange Wear 80 Per Cent.* Ry. Age May 14, '27.
- How Can the Quality of Steel Rails. C. W. Gennet, Jr. Ry. Eng. & Main. June, '27.
- D. L. & W. Adds to Freight Traffic Facilities in New Jersey.* W. H. Speirs. Ry. Age June 4, '27.
- Three-Track Operation on B. & O. Ry. Age June 11, '27.
- L'Eclisse-Chevron.* (The Chevron Fish-Plate.) Georges Coullié and Louis Cadis. Rev. Gen. May, '27.
- 5. Signals and Safety Apparatus**
- Spring Switches Being Used on the Santa Fe.* C. W. Baldridge. Ry. Eng. & Main. June, '27.
- Either-Direction Signals Relieve Serious Terminal Congestion.* Leroy Wyant. Ry. Age June 4, '27.
- Report on Brakes and Brake Equipment.* (Read before Mech. Div. Am. Ry. Assoc.) Ry. Age June 11, '27.
- Report of Lubrication of Cars and Locomotives.* (Read before Mech. Div. Am. Ry. Assoc.) Ry. Age June 11, '27.
- Train Movements Directed by Signal Indication on C. of Ga.* Ry. Age June 18, '27.
- Nouveaux Appareils de Bloc Automatique pour Voies Ferrées. Equipement Electrique de Signaux, Systeme Gouy et Lantier.* (New Automatic Block Apparatus for Railways. Gouy and Lantier System of Electric Signal Equipment.) J. Netter. Gen. Civ. Apr. 2, '27.
- Le Block-System Automatique aux Etats-Unis.* (The Automatic Block System in the United States.) Rev. Gen. Serial beginning May, '27.
- 6. Rolling Stock (Locomotives, Cars) Fuel**
- Recent European Motive Power Developments.* Chas. B. Page. West. Soc. Engrs., Mar., '27.
- Designs and Work.* J. F. Gairns. Int. Ry. Cong. Mar., '27.
- A Comparative Study of Different Methods of Propulsion.* F. Corini. Int. Ry. Cong. Assoc. Mar., '27.
- Europe Shows Way to Increased Motive Power Efficiency.* Ry. Age Apr. 2, '27.
- The Northern Pacific 4-8-4 Type Locomotives.* Ry. Age Apr. 23, '27.
- Journal Friction in Relation to Train Operation.* H. E. Brunner and J. S. Tawressey. Ry. Age Apr. 23, '27.
- Locomotive 60 000, An Experimental High Pressure Compound Locomotive.* Lanford H. Fry. West. Ry. Club Mar., '27.
- New Pioneer Limited Equipment Is Placed in Service.* Ry. Age May 28, '27.
- Locomotive Feed Water Heating.* W. C. Hamm. Eng. Inst. Can. June, '27.
- C. N. R. Buys 4-8-4 Type Locomotives.* Ry. Age June 4, '27.
- C. P. R. Builds Private Cars of Unusual Arrangement.* Ry. Age June 4, '27.
- Diesel Cars Reduce Operating Costs on C. N. R.* Ry. Age June 4, '27.
- Report of Committee on Car Construction.* (Read before Mech. Div. Am. Ry. Assoc.) Ry. Age June 11, '27.
- Report on Locomotive Utilization. (Read before Mech. Div. Am. Ry. Assoc.) Ry. Age June 11, '27.
- Passenger Car Construction.* G. E. Smart. (Read before Mech. Div. Am. Ry. Assoc.) Ry. Age June 11, '27.
- Report on Locomotive Design and Construction.* (Read before Mech. Div. Am. Ry. Assoc.) Ry. Age June 11, '27.
- Relation of Locomotive Development to the Cost of Operation. W. H. Winterrowd. (Read before Mech. Div. Am. Ry. Assoc.) Ry. Age June 11, '27.
- The Status of the Oil-Engine Locomotive.* Alphonse I. Lipetz. (Read before Mech. Div. Am. Ry. Assoc.) Ry. Age June 11, '27.
- Passenger and Freight Car Design. Victor Willoughby. (Read before Mech. Am. Ry. Assoc.) June 11, '27.
- Report of Committee on Tank Cars. (Read before Mech. Div. Am. Ry. Assoc.) Ry. Age June 11, '27.
- Report of Committee on Wheels.* (Read before Mech. Div. Am. Ry. Assoc.) Ry. Age June 11, '27.
- Tests of a 2-8-4 Type Locomotive.* E. C. Poultney. Engr. June 10, '27.
- Schwedische Diesellokomotive mit Flüssigkeitskupplung.* (Swedish Diesel) Locomotives with Liquid Transmission.) Otto Schminke. Ver. deu. Ing. Mar. 19, '27.
- Die neuen Lokomotiven Typ 1AAA-AA1, der Bern-Lötschberg-Simplon-Bahn.* (The New Bern-Lötschberg-Simplon Railway Locomotives, Type 1AAA-AA1.) G. L. Meyfahrt. Schw. Bauz. Apr. 23, '27.
- Les Appareils Culbuteurs pour le Dechargement des Wagons.* (Tilting Apparatus for Unloading Cars.) Gen. Civ. Mar. 5, '27.
- Les Boîtes d'Essieux à Roulements à Rouleaux S. K. F. pour Véhicules de Chemins de Fer.* (S. K. F. Roller Bearing Journal Boxes for Railway Cars.) Rev. Gen. Apr., '27.
- Appareils de Tournage pour Locomotives à Grand Empattement Employés sur le Réseau P.-L.-M. (Turntables with Large Bases for Locomotives on the P.-L.-M. System.) Hubert. Rev. Gen. Apr., '27.
- Frein Intégral, pour le Freinage Continu des Longs Trains de Marchandises. (Integral Brake for Continuous Braking of Long Freight Trains.) Marbet. Gen. Civ. Serial beginning Apr. 23, '27.
- Mise en Oeuvre des Eléments des Locomotives.* (Starting the Elements of Locomotives.) Lionel Wiener. Assoc. Ing. Gand. Pt. 2, '27.
- La Locomotive à Turbine à Vapeur Reid-Mac Leod de la North British Locomotive Co.* (The Reid-Mac Leod Steam Turbine Locomotive of the North British Locomotive Co.) Gen. Civ. May 14, '27.

Le Dechargement Mécanique des Wagons-Tombereaux.* (The Mechanical Unloading of Dump Cars.) V. Sabouret. Gen. Civ. May 28, '27.

7. Use of Electricity

The Economics of Railroad Electrification.* Sidney Withington. Bost. Soc. C. E. Apr., '27. Report of Committee on Electric Rolling Stock.* (Read before Mech. Div. Am. Ry. Assoc.) Ry. Age June 11, '27.

Neuerungen im mechanischen Aufbau elektrischer Schnellzuglokomotiven.* (Improvements in the Mechanical Construction of Electric Express Locomotives.) Schw. Bauz. Mar. 26, '27.

Locomotives Electriques de la Compagnie du Chemin de Fer de Paris à Orléans.* (Electric Locomotives of the Paris-Orleans Railroad Company.) A. Bidault des Chaumes. Gen. Civ. Mar. 12, '27.

La Traction Electrique dans les Galeries de Mines par Locomotives à Accumulateurs. Locomotive des Mines de Lens.* (Electric Traction in Mine Galleries by Storage Battery Locomotives. Locomotives in the Lens Mines.) A. Sprecher. Gen. Civ. May 28, '27.

8. Stations, Terminals, Engine Houses, Shops

Mechanically Operated Tools Used in Permanent Way Maintenance.* Dino Levi de Veail. (From *Revista dei Trasporti*.) Int. Ry. Cong. Assoc. Apr., '27.

Central of Georgia New Engine Terminal.* S. A. Elkan. Ry. Age Apr. 23, '27.

New Types of Turntable, Dutch State Railways.* Th. W. Mundt. (From *De Ingenieur*.) Int. Ry. Cong. Assoc. May, '27.

New York Central Handles Scrap on Big Scale.* Ry. Age May 21, '27.

B. & M. Solving Unusual Terminal Problem at Boston.* Ry. Age May 28, '27.

Stores Department of the New England Transportation Company.* Ry. Age May 28, '27.

Humping Four Thousand Cars a Day.* Ry. Age June 4, '27.

Report on Design of Shops and Engine Terminals.* (Read before Mech. Div. Am. Ry. Assoc.) Ry. Age June 11, '27.

Zur Neugestaltung des Bahnhofplatzes Genf-Cornavin. Ein Betrag zur verkehrstechnischen Platzausbildung.* (Altering the Site of the Geneva-Cornavin Station. A Contribution to the Location of Traffic Stations.) Carl Jegher. Schw. Bauz. Mar. 26, '27.

Encore la Place de la Gare de Genève-Cornavin.* (Again the Geneva-Cornavin Station Square.) Camille Martin. Schw. Bauz. Apr. 30, '27.

L'Agrandissement de la Gare de Paris de la Compagnie Paris-Lyon-Méditerranée.* (Enlargement of the Paris Station of the Paris-Lyon-Mediterranean Company.) R. Broussard. Rev. Gen. May, '27.

9. Technical and Commercial Use

Merchandise Handling Speeded by Tonnage Bonus System.* Ry. Age Apr. 9, '27.

Urban and Interurban Buses. Britton I. Budd. Am. Soc. C. E. May, '27.

Report of Loading Rules Committee.* (Read before Mech. Div. Am. Ry. Assoc.) Ry. Age June 11, '27.

Railway Motor Transport.* F. J. Swentzel. (Read before Mech. Div. Am. Ry. Assoc.) Ry. Age June 11, '27.

Report on Automotive Rolling Stock.* (Read before Mech. Div. Am. Ry. Assoc.) Ry. Age June 11, '27.

c. Ferry Boats

Car-Ferry Landing at Milwaukee; Grand Trunk Ry.* Eng. N. R. May 19, '27.

d. Street Railways, Elevated Railways, Subways

1. General Articles

The Railway and Urban Improvements at Picadilly Circus.* Engr. Serial beginning Apr. 29, '27.

Verbesserungen bei der Hamburger Hochbahn.* (Improvements on the Hamburg Elevated Railway.) W. Mattersdorff. Ver. deu. Ing. May 21, '27.

Ler Extensions du Chemin de Fer Métropolitain "Alphonse XIII", à Madrid.* (The Extensions of the "Alphonse XIII" Metropolitan Railroad at Madrid.) J. Eugenio Ribera. Gen. Civ. Mar. 26, '27.

Les Extensions Récentes du Réseau Métropolitain de Londres.* (Recent Extensions to the Metropolitan System in London.) Gen. Civ. April 16, '27.

e. Automobiles

3. Electric Automobiles

Les Nouveaux Accumulateurs de Traction.* (New Vehicle Storage Batteries.) V. Neveux. Gen. Civ. Mar. 26, '27.

x. Miscellaneous

Le Garage "Banville" pour Automobiles, à Neuf Etages, en Béton Armé, à Paris.* (The Nine Story "Banville" Automobile Garage of Reinforced Concrete, in Paris.) H. Terrisse. Gen. Civ. May 7, '27.

f. Aeronautics

1. General Articles

Die Möglichkeit der Weltraumfahrt.* (The Possibility of Travel in Space.) H. Lorenz. Ver. deu. Ing. May 7, '27.

Les Phares à Très Longue Portée. Le Phare d'Aviation du Mont Valérien, près de Paris.* (Very Long Range Searchlights. The Aviation Searchlight at Mount Valerien, near Paris.) Ch. Dantin. Gen. Civ. Apr. 2, '27.

3. Aeroplanes

Deutsche Verkehrsflugzeuge.* (German Airplane Transportation.) E. Gossow. Ver. deu. Ing. May 7, '27.

Die Entwicklung des deutschen Verkehrsflugzeuges.* (The Evolution of the German Passenger Airplane.) W. Huth. Ver. deu. Ing. May 7, '27.

Flugzeuge der zehnten Pariser Luftfahrt-Ausstellung.* (Airplanes at the Tenth Paris Aerial Exhibition.) F. Gossiau. Ver. deu. Ing. May 7, '27.

Spaltflügel-Flugzeuge.* (Split-Wing Airplanes.) E. Everling. Ver. deu. Ing. May 7, '27.

I. Municipal Water-Works. Agricultural Engineering. Irrigation

a. General Articles

- The Municipal Water Plant. H. L. Brown. (From paper read before Kansas W. W. Assoc.) Mun. & Co. Eng. Mar., '27.
 Public Ownership at Bridgewater, Massachusetts, and the Improvements Made After Purchase by the Town.* Frank A. Barbour. N. E. W. W. Assoc. Mar., '27.
 Water Supply for Army Railways in France.* Paul M. LeBach. Am. Soc. C. E. Apr., '27.
 Water Works at Belle River, Ontario.* D. H. Fleming. Can. Engr. Apr. 5, '27.
 Toronto's Additional Water Supply to Cost Over \$14 000 000.* Eng. N. R. Apr. 14, '27.
 Restoring a Small Water Supply Ruined by Landslide.* Henry W. Taylor. Eng. N. R. May 26, '27.
 The Water Supply Problems of Tennessee.* Howard R. Fullerton. Am. W. W. Assoc. June, '27.
 South Australian Water Supplies.* Engr. June 3, '27.
 Les Projets d'Irrigation de la Camargue (Bouches-du-Rhône), et le Système d'Irrigations en Egypte.* (Camargue Irrigation Projects (Bouches-du-Rhône), and the Irrigation Systems in Egypt.) Gen. Civ. May 14, '27.

b. Hydrology, Water Resources

- Developing a 10-M. G. D. Water Supply from Wells and Surface Sources.* Eng. N. R. June 2, '27.
 Wechselbeziehungen zwischen Grundwasserstand und Waldwirtschaft.* (Correlation of Ground Water Level and Forest Economy.) R. Sinz. Gas und Wasser. April 2, '27.
 Einfluss von Hochwasser auf den Grundwasserstand.* (Effect of Floods on the Ground Water Level.) Russwurm. Gas und Wasser. April 9, '27.
 Die geologischen Grundlagen der Grundwasserversalzung im Kreise Gr.-Werder, Freie Stadt Danzig.* (The Geological Bases of the Salting of Ground Water, Gr.-Werder District, Free City of Danzig.) Karl Elwalt. Gas und Wasser. Serial beginning April 30, '27.

c. Dams and Reservoirs

- Problems of Economic Water Storage.* Paul Ogilvie. Can. Engr. Mar. 29, '27.
 Pollution of Boundary Waters. G. H. Ferguson. (Paper read before Ontario Land Surveyors Assoc.) Can. Engr. Mar. 29, '27.
 Waterproofing the Upstream Face of Mountain Dell Dam.* Eng. N. R. Mar. 31, '27.
 Storage Required for the Regulation of Stream Flow.* Discussion: Edward H. Sargent, Allen Hazen, Roger W. Armstrong, H. Alden Foster, Joel D. Justin, L. Standish Hall and Edward M. Craig, Jr. Am. Soc. C. E. Apr., '27.
 The Cleveland Reservoir. Elbert Peets. Am. W. W. Assoc. Apr., '27.
 Experimental Deformation of a Cylindrical Arched Dam.* Discussion: Charles W. Comstock. Am. Soc. C. E. Apr., '27.
 Water-Proof Masonry Dams. Discussion: Nathan C. Johnson and F. W. Scheldenhelm. Am. Soc. C. E. Apr., '27.
 Analysis of Arch Dams.* W. A. Perkins. (Paper read before Sacramento Section, Am. Soc. C. E.) West. Constr. N. Apr. 10, '27.
 A Comparison of the Cross-Sections of Some Well-Known Dams.* Culbert W. Faries. West. Constr. N. Apr. 10, '27.
 Recent Failure of the Hemet Auxiliary Dam in Riverside County, California.* West. Constr. N. Apr. 10, '27.
 Cushman Project Provides Large Storage at Low Cost.* B. E. Torpen. Eng. N. R. Apr. 14, '27.
 Concrete Mix Designing on an Oklahoma Dam.* Webster L. Benham. (Paper read before Kansas City Engrs. Club.) Engr. N. R. Apr. 21, '27.
 Experimental Deformation of a Cylindrical Arched Dam.* Discussion: W. H. R. Nimmo. Am. Soc. C. E. May, '27.
 Storage Required for the Regulation of Stream Flow.* Discussion: W. W. Brush, Richard H. Gould, A. Streiff, and Sigurd Ellassen. Am. Soc. C. E. May, '27.
 Brush Dam Built Annually on the Colorado Yuma.* Eng. N. R. May 5, '27.
 The Gordon Valley Dam.* A. Kempkey. West. Constr. N. May 25, '27.
 The Melones Dam on the Stanislaus River, California.* E. Court Eaton. West. Constr. N. May 25, '27.
 Building 6-M. G. Covered Reservoir at Madison, Wis.* L. A. Smith. Eng. N. R. May 26, '27.
 New Dam Will Double Water Supply of Portland, Ore.* D. C. Henny. Eng. N. R. May 26, '27.
 The Continuous Nature of Decay in Dams.* William Harvey. Engr. May 27, '27.
 Experiences With Storage Reservoirs at Low Level. William W. Brush. Am. W. W. Soc. June, '27.
 Lost Creek Dam, Lost Creek, California.* Culbert W. Faries. West. Constr. N. June 10, '27.

d. Analysis and Purification of Water

- The Effect of Pipes of Different Metals Upon the Quality of Water Supplies.* H. W. Clark. N. E. W. W. Assoc. Mar., '27.
 Mechanically Cleaned Sedimentation Basins for Water Works.* Edmund B. Besselièvre. N. E. W. W. Assoc. Mar., '27.
 The Poisonous Effects of Copper. F. B. Mallory. N. E. W. W. Assoc. Mar., '27.
 Water Treating Problems in Railroad Practice. S. C. Johnson. Am. W. W. Assoc. Apr., '27.
 The Baldwin Filtration Plant.* G. W. Hamlin. Am. W. W. Assoc. Apr., '27.
 Chlorination for Algae Control.* Chester Cohen. Am. W. W. Assoc. Apr., '27.
 Dissolved Oxygen Changes During Filtration.* W. U. Gallaher. Am. W. W. Assoc. Apr., '27.
 Chlorinating Operations at Ashokan Headworks.* William W. Brush. Eng. & Contr. (W. W.) Apr., '27.
 Water Storage: Some Biological Considerations.* David Ellis. Eng. N. R. Apr. 29, '27.
 Spore Bearers in the Spavinaw Water Supply. R. L. Ginter. Am. W. W. Assoc. May, '27.
 Phenol-Tastes in Chlorinated Water. L. C. Osborn. Am. W. W. Assoc. May, '27.

- Electrolytic Chlorination at Sacramento Filtration Plant.* Harry N. Jenks. Am. W. W. Assoc. May, '27.
 The Denver Filter Plant.* James H. Fuertes. Am. W. W. Assoc. May, '27.
 Corrosion in a Water Supply System and Methods of Protection. E. B. Stewart. Am. W. W. Assoc. May, '27.
 Potentiometric Determination of Hydrogen Ion Concentration in Boiler Waters.* Willard N. Greer and Henry C. Parker. Am. W. W. Assoc. May, '27.
 Tastes and Odors in Public Water Supplies. Francis E. Daniels. (Paper read before Penn. W. W. Assoc.) Eng. & Contr. (W. W.) May, '27.
 New 12-M. G. D. Water Purification Plant for Oakland.* Eng. N. R. May 26, '27.
 Working in Laboratory and Experimental Plant to Solve Filtration Problems.* Eng. & Contr. (W. W.) June, '27.
 Experiments in the Hydraulics of Filter Underdrains.* N. Malishewsky. Am. W. W. Assoc. June, '27.
 Water Softening As An Adjunct to Water Purification. Charles P. Hoover. Am. W. W. Assoc. June, '27.
 Preliminary Experiments on the Treatment of Lake Michigan Water for Chicago.* John R. Baylis. Am. W. W. Assoc. June, '27.
 Typhoid Fever in the Large Cities of the United States in 1926.* Am. W. W. Assoc. June, '27.
 Entsäuerungsanlagen der Stadt Amberg.* (De-Acidification Plant of the City of Amberg.) Egl. Gas und Wasser. Mar. 26, '27.
 Ueber eisen- und manganaufösende Wässer, die Rolle der Kohlensäure bei dem Metallangriff und über die Bestimmung der Ueberschusskohlenensäure im Wasser.* (On Waters that Dissolve Iron and Manganese, the Role of Carbonic Acid in the Corrosion of the Metal, and on the Determination of the Excess Carbonic Acid in Water.) H. Lührig. Gas und Wasser. April 23, '27.

e. Distribution of Water

- The Gezira Irrigation Scheme, Including the Sennar Dam on the Blue Nile.* Oswald Longstaff Prowdie Inst. C. E., Vol. 222. Pt. 2, 1925-26.
 The Study and Extension of Distribution Systems. Laurence C. Hough. N. E. W. W. Assoc. Mar., '27.
 Water Wastes and Results of 100% Metering.* A. E. Walden. Engrs. & Eng. Mar., '27.
 The Proposed Aqueduct from the Colorado River. William Mulholland. Am. W. W. Assoc. Apr., '27.
 The Pitometer Survey in the Improvement and Maintenance of a Distribution System. Meyer Serkes. Am. W. W. Assoc. Apr., '27.
 Notes on Pumping and Water Works Operation. McKean Maffitt. Am. W. W. Assoc. Apr., '27.
 The Sandfields Pumping Station of the South Staffordshire Waterworks Company.* Eng. Serial beginning Apr. 22, '27.
 Flow Tests of Winnipeg Water District Aqueduct.* F. S. Adamson and J. H. Grant. Eng. N. R. Apr. 28, '27.
 Some Phases of Irrigation Finance.* D. C. Henny. Am. Soc. C. E. May, '27.
 State Reclamation in Washington. R. K. Tiffany. Am. Soc. C. E. May, '27.
 Lethbridge Northern Irrigation Project.* P. M. Sauder. Can. Engr. May 3, '27.
 New Water Works Plant at Smith's Falls.* Can. Engr. May 17, '27.
 Centrifugally Cast Reinforced Concrete Pipe, for the Water-Supply of Riverside, California.* Edward R. Bowen. May 25, '27.
 A New 300 M. G. P. D. Pumping Station in Chicago.* Eng. & Contr. (W. W.) June, '27.
 Charges for Public Fire Protection.* R. L. Dobbin. Am. W. W. Assoc. June, '27.
 Protecting the Water Supply System in Subway Construction in New York City.* Robert Ridgway. Am. W. W. Assoc. June, '27.
 Use of Two Water Mains in Wide Streets.* Thomas F. Wolfe. Am. W. W. Assoc. June, '27.
 A General Rule for Making Extensions. R. E. Duffy. Am. W. W. Assoc. June, '27.
 Ueber den Bau von Wasserführungs-Freisiegelstollen in den der Trias angehörigen Randgebirgen der nördlichen Kalkalpen.* (On the Construction of Hydraulic Open Water Surface Galleries in the Chain of Mountains about the Northern Calcareous Alps Belonging in the Triassic Formation.) Franz Jenikowsky. Oest. Ing. Arch. Ver. Serial beginning Mar. 4, '27.
 Wassersperrung bei Zahlungsverzug. (Shutting off Water for Non-Payment.) Heine. Gas und Wasser. Mar. 19, '27.
 Die Kultivierung Aegyptens und des Sudan. Der Sennar-Staudamm am Blauen Nil.* (The Cultivation of Egypt and of the Sudan. The Sennar Barrage on the Blue Nile.) E. Sachs. Ver. deu. Ing. April 9, '27.
 Die neue Wasserversorgungsanlagen des Gaswerks Stuttgart-Gaisburg.* (The New Water Supply Plant of the Stuttgart-Gaisburg Gas Works.) Giesing. Gas und Wasser. April 16, '27.
 Ein neues Verfahren zur Herstellung gusselerner Röhren.* (A New Method for Making Cast Iron Pipe.) M. von Anacker. Schw. Bauz. May 21, '27.
 Die Entwicklung im Antrieb der Wasserfördermaschinen.* (The Development of Drives for Water Lifting Machines.) Gross. Gas und Wasser. Serial beginning May 14, '27.
 Alimentation en Eau de la Ville de Prague.* (The Water Supply of the City of Prague.) Sentenac. Ann. P. et C. Jan., '27.

f. Drainage of Land

- Dynamite as an Aid to Ditch Maintenance.* E. S. Blaine. Eng. & Contr. Apr., '27.
 Large Pumping Plant on Wheels of Great Service in Flood.* C. R. Knowles. Ry. Eng. & Main. June, '27.

J. Sewerage. Sewage and Refuse Disposal

a. Sewers and Drains

- Reinforcing the Joints in a 7-Ft. Ocean Outfall Sewer.* Eng. N. R. Apr. 7, '27.
 Compressed Air Permits Sewer Work Under Street.* Eng. & Contr. (W. W.) June, '27.
 Outfall Sewer Experiences in Imperial Valley.* R. F. Goudey. Eng. N. R. Apr. 21, '27.

- The Estimation of Storm-Water Discharge.* John Reid. Inst. Mun. & Co. Engrs. May 10, '27.
 Isolated Sewer System for St. Paul Minn.* Eng. N. R. May 19, '27.
 Die Bemessung von Regenwasserkanälen mit Hilfe nomographischer Verfahren.* (Proportioning Rain Water Channels Using Nomographic Methods.) Friederich Reinhold. Gesund. Ing. Serial beginning April 23, '27.
 La Résistance des Tampons de Regard Métalliques pour Canalisations sous Chaussées.* (The Strength of Plugs for Metal Sewer Pipes under Roads.) P. Caufourier. Gen. Civ. April 16, '27.

b. Sewage Disposal, Purification

- Municipal Sanitation in Virginia. Richard Messer. (From *Virginia Municipal Review*.) Mun. & Co. Eng. Mar., '27.
 Garbage Collection and Disposal in Middle West. W. H. Carrigg. (From *Nation's Health*.) Mun. & Co. Eng. Mar., '27.
 Reasons for Differences in Behavior of Imhoff Tanks. Harrison P. Eddy. (Paper read before Am. Assoc. Adv. of Science.) Mun. & Co. Eng. Mar., '27.
 Brief Notes on the Sewerage and Sewage Disposal of Bath.* F. P. Sissons. Inst. Mun. & Co. Engrs. Mar. 29, '27.
 Missouri Highway Sanitation Problems and Program. W. Scott Johnson. Am. W. W. Assoc. Apr., '27.
 Bloomington and Normal Sewage Treatment Plant.* Stanley Pinel. (Paper read before Illinois Soc. Engrs.) Eng. & Contr. (W. W.) Apr., '27.
 Chlorination Reduces Foaming in Imhoff Tanks. Chester Cohen. Eng. N. R. Apr. 7, '27.
 Intermittent Sand Filters for Sewage. Ernest Boyce. (Paper read before Conference on Sewage Treatment.) Mun. & Co. Eng. Apr., '27.
 Grit Chambers and Sewage Screens. Howard R. Green. (Paper read before Conference on Sewage Treatment.) Mun. & Co. Eng. Apr., '27.
 The Design, Construction, and Operation of a Small Sewage Disposal Plant. Discussion: Franklin Hudson, Jr. Am. Soc. C. E. May, '27.
 Garbage Disposal. A Symposium. Discussion: Samuel A. Greeley and John V. Lewis. Am. Soc. C. E. May, '27.
 Garbage Collection and Disposal in Belmont, Mass. Dana M. Wood. Eng. & Contr. (W. W.) May, '27.
 Financing the Baltimore Sewerage System.* M. J. Ruark and C. E. Keefer. Eng. N. R. May 5, '27.
 The Operation of Imhoff Tanks. Harrison P. Eddy. (Paper read before Am. Assoc. Adv. Science.) Eng. & Contr. June, '27.
 Efficiency of Chlorinating Sewage Tank Effluents.* W. V. D. Tiedeman. Eng. N. R. June 9, '27.
 New Type of Sewage Treatment Plant at Winterset, Iowa.* T. R. Haseltine. West. Constr. N. June 10, '27.
 Frischwasserklärung bei der Abwasserreinigung.* (Fresh Water Clarification in the Purification of Sewage.) M. Strell and B. Rentsch. Ver. deu. Ing. Feb. 26, '27.
 Ueber die Abwasserreinigung mit aktiviertem Schlamm nach Versuchen mit Münchener Kanalwasser.* (Sewage Purification with Activated Sludge According to Experiments with Canal Sewage from Munich.) Martin Strell. Gesund. Ing. Mar. 5, '27.
 Ueber die neueren Verfahren der Abwasserbeseitigung.* (On the Newer Methods of Sewage Disposal.) Philaethes Kuhn. Gesund. Ing. Mar. 19, '27.
 Die neue Kläranlage der Stadt Bad Homburg.* (The New Clarification Plant for the City of Bad Homburg.) Lipp. Z. d. Bauver. Mar. 23, '27.
 L'Epuraton des Eaux d'Egout. Applications Anglaises de la Méthode des Boues Activées.* (Purification of Sewage Waters. English Applications of the Activated Sludge Method.) M. Fontaine. Gen. Civ. April 30, '27.

c. Refuse Disposal

- Plant Disposes of Non-Combustible Rubbish at Los Angeles.* Eng. N. R. Mar. 31, '27.

K. Heat Engines

a. Steam Engines, Boilers

- The Triple-Expansion Steam-Engine as Applied to the Pumping of Water, With Special Reference to the Plant at Lea Bridge.* Hugh Ralph Lupton. Inst. C. E. Vol. 222. Pt. 2, 1925-26.
 Present Tendencies of Steam Station Design.* Vern E. Alden. Power. Apr. 12, '27.
 The Modern Steam Engine and Internal Combustion Motors.* Maurice DeMoulin. Serial beginning Apr. 15, '27.
 Energiewirtschaft und Hochdruckdampfbetrieb.* (Energy Economy and High Pressure Steam Operation.) Löffler. Ver. deu. Ing. April 2, '27.
 Dampfkraftanlage mit Benson-Kessel im Kraftwerk der Siemens-Schuckertwerke.* (The Steam Power Plant with a Benson Boiler in the Power Plant of the Siemens-Schuckert Works.) Wilhelm Abendroth. Ver. deu. Ing. May 14, '27.

b. Steam Turbines

- Heat Balances in Industrial Plants.* C. A. Kelsey. West. Soc. Engrs. Mar., '27.
 20 000 K. W. Parsons Turbo-Alternator at Rotterdam.* Engr. Serial beginning May 13, '27.
 Untersuchungen an neuzeitlichen mehrgeschüssigen Dampfturbinen.* (Investigations of Modern Multiple Casing Steam Turbines.) E. Josse. Ver. deu. Ing. Serial beginning Mar. 12, '27.
 Ueber Transversalschwingungen der Dampfturbinen-Laufschalen.* (On Transverse Vibrations of Steam Turbine Runner Discs.) Fr. Dubois. Schw. Bauz. Mar. 19, '27.
 Getriebedampfturbinen für hohe und höchste Drücke.* (Steam Turbines for High and Maximum Pressures, as Driving Power.) H. Bauer. Ver. deu. Ing. April 30, '27.

- Einfluss der Dampfnässe auf Dampfturbinen.*** (Effect of Steam Wetness on Steam Turbines.) J. v. Freudenreich. Ver. deu. Ing. May 14, '27.
Leistungsversuche an einer 11 000 kW-Zoelly-Dampfturbine.* (Power Tests on a 11 000 KW Zoelly Steam Turbine.) A. Stodola. Ver. deu. Ing. May 28, '27.
Die Werkstoffe im heutigen Dampfturbinenbau.* (The Materials in Modern Steam Turbine Construction.) A. Thum. Ver. deu. Ing. May 28, '27.

c. Electric Lighting

- Application of the Semi-Diesel Oil Engine.*** Edward W. Thompson. Can. Engr. Apr. 26, '27.
Diesel and Semi-Diesel Engine Costs.* E. R. Mellenger. Can. Engr. June 7, '27.
L'Emploi de Moteurs à Gaz Pauvre pour la Navigation Maritime. Le Moteur Baudouin et le Gazogene Malbay.* (The Use of Lean Gas Engines for Maritime Navigation. The Baudouin Engine and the Malbay Gas Producer.) Pierre Bochet. Gen. Civ. Mar. 19, '27.
Der Luftspelcher-Dieselmotor von Robert Bosch, A.-G.* (The Robert Bosch A.-G. Air Reservoir Diesel Engine.) R. Stribeck. Ver. deu. Ing. May 28, '27.
Untersuchungen an der Dieselmachine. Die Dieselmachine als Kraftfahrzeugmotor.* (Investigations on Diesel Engines. The Diesel Engine as an Automobile Engine.) Kurt Neumann. Ver. deu. Ing. May 28, '27.

L. Electricity

a. Production of Electricity

2. Magneto and Dynamo—Electric Machines

- Commutatrice en Cascade des Ateliers de Constructions Electriques de Charleroi.*** (Rotary Converters in Cascade Made by the Ateliers de Constructions Electriques de Charleroi.) Gen. Civ. Mar. 19, '27.

b. Distribution and Transmission of Electricity

1. Storage Batteries and Cells

- Extensions to the Treforest Power Station.*** Engr. May 6, '27.
Power Supply for Transportation in Chicago.* H. G. Gear. West. Soc. Engrs. Feb., '27.
Groupe Turbo-Alternateurs de 160 000 KW de la Centrale Thermique de Hell Gate, à New York.* (160 000 KW Turboalternator Group of the Hell Gate Central Station in New York.) Gen. Civ. April 16, '27.
The Stourport Power Station.* Engr. Serial beginning June 10, '27.
Long Beach Steam Plant No. 3 of the Southern California Edison Company.* Raymond Wilcox. West. Constr. N. June 10, '27.
2. Long-distance Transmission of Energy
Joints in High-Voltage Multiple-Conductor Cable.* Thos. F. Peterson. A. I. E. E. June, '27.
Model Transmission Towers Under Load.* C. R. Young and Others. Can. Engr. May 31, '27.
L'Application du Système de Distribution Thyry par Courant Continu à Intensité Constante, au Projet d'Usine Marémotrice de la Frénaye (Côtes-du-Nord). (Application of the Thyry System of Distribution by Continuous Current at Constant Intensity to the Project of the Frénaye Tide Power Plant (Cotes-du-Nord)). Louis Schwob. Gen. Civ. May 21, '27.

5. Transformers and Converters

- Der Buchholz-Schutz für Umspanner.*** (The Buchholz System of Transformer Protection.) Bruno Thierbach. Ver. deu. Ing. April 2, '27.

x. Miscellaneous

- The Bavarian Power Scheme.*** Eng. June 10, '27.

d. Mechanical Uses of Electricity

3. Welding

- The Influence of Electric Welding in the Design and Fabrication of Plant Structures.*** Joseph Newell Reeson. Inst. C. E., Vol. 222. Pt. 2, 1925-26.
Construction Procedure on Two Arc-Welded Buildings.* A. G. Bissell. Eng. N. R. June 9, '27.
Welding Finds Extensive Application in All Oil Field Work.* Eng. N. R. June 16, 1927.
Use Electric Welding Process to Strengthen Bridge.* Ry. Age June 18, '27.

e. Electrochemistry and Electrometallurgy

- Amerikanische Elektrogilühofen und ihre Wirtschaftlichkeit.*** (American Electric Annealing Furnaces and Their Economy.) Hans Nathasius. Ver. deu. Ing. May 14, '27.
L'Electrification des Trains Blooming à Vapeur au Point de Vue Economique.* (The Electrification of Steam Blooming Mills from the Economic Viewpoint.) L. Persoz. Gen. Civ. Mar. 26, '27.

f. Signals and Communication

- Telegraph Traffic Engineering.** H. Mason and C. J. Walbran. A. I. E. E. May, '27.
Quantitative Determination of Radio Receiver Performance.* H. D. Oakley. A. I. E. E. June, '27.
Transmissions Radiotélégraphiques, Système Verdan, Affranchies de Parasites.* (Verdan System of Radiotelegraphic Transmission, Free from Parasites.) R. Malo. Gen. Civ. April 9, '27.
Les Haut-Parleurs de T. S. F. sans Pavillon.* (Radio Loud Speakers without Flaring Openings.) Guy Malgorn. Gen. Civ. May 14, '27.
Le Programme de Transformation du Service Téléphonique à Paris. La Généralisation du Système Automatique Rotary.* (The Transformation Program for Telephone Service in Paris. The Generalization of the Rotary Automatic System.) Georges Kimpfelin. Gen. Civ. May 28, '27.

M. Architecture

a. Educational, Government and Scientific Buildings

- Das neue Land- und Amtsgericht in Lüneburg, ein Schlossumbau.* (The New Provincial and County Court in Lüneburg, a Converted Castle.) Warnemünde. Z. d. Bauver. Mar. 2, '27.
 Die Hessen-Kampfbahn in der Voraue zu Cassel.* (The Hessian Arena in the Voraue at Cassel.) L. Kropf. Gesund. Ing. Mar. 26, '27.
 Das Rathaus in Jena und sein Umbau.* (The City Hall in Jena and Its Alteration.) O. Stiehl. Z. d. Bauver. May 18, '27.

c. Residences, Hotels

- Schloss Schwöbber bei Hameln a. d. Weser.* (Schwobber Castle at Hameln on the Weser.) Nonn. Z. d. Bauver. Mar. 2, '27.
 Englische Stahlhäuser der Bauart Weir.* (English Steel Houses of the Weir Type.) A. Lion. Z. d. Bauver. April 20, '27.
 Stahl-Wohnhäuser.* (Steel Dwellings.) A. Lion. Oest. Ing. Arch. Ver. April 29, '27.
 Das Palmerhouse in Chicago, ein amerikanisches Grosshotel.* (The Palmer House in Chicago, a Large American Hotel.) Schw. Bauz. Serial beginning May 7, '27.
 Der Eberthof in Wien.* (The Eberthof Hotel in Vienna.) Oest. Ing. Arch. Ver. May 13, '27.
 Wohnhäuser nach dem Stahlwandsystem.* (Residences According to the Steel Wall System.) Alfred Schmid. Oest. Ing. Arch. Ver. May 13, '27.

e. Hospitals and Asylums

- La Blanchisserie de la Maison Nationale d'Hospitalisation de Saint-Maurice (Seine).* (The Laundry of the National Hospital at Saint Maurice, Seine.) Ch. Dantin. Gen. Civ. May 21, '27.

h. Roofs, Domes

- Steildach-Flachdach-Horizontaldach.* (Steep Roof-Flat Roof-Horizontal Roof.) Karl Rössler. Z. d. Bauver. Mar. 23, '27.

i. Fire Protection

- Reducing the Fire Hazard in Bus Garages.* (From Progress Report of Nat'l Fire Protection Assoc.) Ry. Age May 28, '27.

x. Miscellaneous

- Earthquake Damage to Buildings in Calexico and Mexicali.* Eng. N. R. Apr. 7, '27.
 Mittel zur Erzielung guter Raumakustik.* (Method for Obtaining Good Room Acoustics.) H. Reiher. Gesund. Ing. Feb. 26, '27.
 Zusammenfassendes über das Weimarer und Dessauer "Bauhaus".* (Remarks on the Weimar and Dessau "Bauhaus".) Nonn. Z. d. Bauver. Mar. 9, '27.
 Die wirtschaftliche Beleuchtung industrieller Betriebsstätten.* (On the Illumination of Industrial Working Places.) Foerster. Z. d. Bauver. Mar. 23, '27.

O. Administration. Legislation. Economics. Statistics

b. Economic Questions of a General Character; Valuations, etc.

- Valuation Work from the Engineer's Standpoint. John Hole. Eng. Inst. Can. Apr., '27.

d. Administrative and Financial Management of Means of Communication

5. Railroads and Street Railways

- The Relation of Highway Transportation to the Railway.* Ralph Budd. Am. Soc. C. E. May, '27.
 Are Additional Reserves Sound.* Henry Earle Riggs. Ry. Age. Serial beginning May 14, '27.

Q. Surveying and Geodesy

- Triangulation of the New Cascade Tunnel.* Henry B. Alvord. Bost. Soc. C. E. Mar., '27.
 Aerial Surveys for City Planning. Discussion: Gerard H. Matthes. Am. Soc. C. E. Apr., '27.
 Topographical and Exploration Surveys.* T. H. Bartley. (Report read before Ontario Land Surveyors.) Can. Engr. Apr. 5, '27.
 Alaska is Mapped from the Air.* John L. Von Blon. Sci. Am. May, '27.
 Method of Leveling Across Rivers.* H. G. Avers. Mil. Engr. May-June, '27.
 Control Surveys of the United States.* C. V. Hodgson. Mil. Engr. May-June, '27.
 Method of Leveling Across Rivers.* H. G. Avers. Mil. Engr. May-June, '27.
 Control Surveys of the United States.* C. V. Hodgson. Mil. Engr. May-June, '27.

R. Landscape Engineering

- The Golf Course and the Land Subdivision.* Henry V. Hubbard. Land. Arch. Apr., '27.
 A Park Plan for Monroe County, New York. Carl Crandall. Cornell C. E. May, '27.

S. City Planning

- The Cincinnati City Plan Is Now Law. Discussion: Thomas H. Reed. Am. Soc. C. E. Apr., '27.
 Town Planning and Its Relations to the Professions Involved. Discussion: Noulau Cauchon. Am. Soc. C. E. Apr., '27.
 The Development of Mariemont, Ohio. Discussion: Charles Wellford Leavitt. Am. Soc. C. E. Apr., '27.
 Hexagonal Planning, Traffic Interceptor, and Orbit.* Discussion: John Nolen, E. P. Goodrich, Lawrence Veiller, George B. Ford, Noulau Cauchon. Am. Soc. C. E. May, '27.
 Town Planning and Its Relations to the Professions Involved. Discussion: John Nolen. Am. Soc. C. E. May, '27.
 Hexagonal Planning, Traffic Interceptor, and Orbit.* Noulau Cauchon. Am. Soc. C. E. May, '27.
 Siedlung Cecilengärten in Berlin-Schöneberg.* (Cecilia Garden Dwellings in Berlin-Schöneberg.) Heinz Lassen. Z. d. Bauver. March 2, '27.

T. Oil and Oil Engineering

- Civil Engineering and Construction in the Mid-Continent Oil Fields.* Waldo C. Bowman. Eng. N. R. Serial beginning Apr. 14, '27.
 Locating Gravity Pipe Lines for Gathering Crude Oil.* L. E. Davis. Eng. N. R. May 5, '27.
 Building a 200-Mile Oil Pipe Line.* Eng. N. R. June 2, '27.
 Welding Finds Extensive Application in All Oil Field Work.* Eng. N. R. June 16, '27.

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Men Available.—Under this heading, brief announcements will be published without charge. These announcements will not be repeated, except on request received after an interval of one month. Names and records will remain in the active files of the Service for a period of three months, and are renewable on request. Notices for *Proceedings* should be addressed to Employment Service, 31 West 39th Street, New York, N. Y., and should be received prior to the first of the month.

Opportunities.—A Bulletin of engineering positions available is published weekly and may be obtained by members of the Societies concerned at a subscription rate of \$3 per quarter, or \$10 per annum, payable in advance. Positions which are not filled promptly as a result of publication in the Bulletin, may be announced herein.

Voluntary Contributions.—Members obtaining positions through the medium of this Service are invited to co-operate with the Societies in the financing of the work by nominal contributions made within thirty days after placement, on the basis of \$10 for all positions paying a salary of \$2 000 or less per annum; \$10 plus 1% of all amounts in excess of \$2 000 per annum; temporary positions (of one month or less), 3% of total salary received. The income contributed by the members, together with the finances appropriated by the four Societies named, will be sufficient, it is hoped, not only to maintain but to increase and extend the Service.

Replies to Announcements.—Replies to announcements published herein, or in the Bulletin, should be addressed to the key number indicated in each case, with a two-cent stamp attached for re-forwarding, and forwarded to the Employment Service at the address given. Replies received by the Service after the positions to which they refer have been filled, will not be forwarded.

MEN AVAILABLE

APPRAISAL ENGINEER, M. Am. Soc. C. E., skilled in scientific appraising. A-1602.

ENGINEER OR ASSISTANT, Assoc. M. Am. Soc. C. E.; age 45; married. Reinforced concrete designer, highway and hydro-electric experience, subdivision surveys, steel and mechanical designer and detailer.

estimating. Paved highway design, survey, and construction. Location, Continental United States, Canada. B-7486.

PROFESSOR OF CIVIL ENGINEERING, Assoc. M. Am. Soc. C. E.; Master's Degree, Cornell. Seven years, teaching, and eight years in responsible practice in sani-

tary and municipal engineering. Location desired for fall. B-7678.

CIVIL ENGINEER. Jun. Am. Soc. C. E.; age 30; married. Ten years' experience, public utilities, railways, highway, and municipal engineering. Experienced in both field and office work. Accustomed to assuming large responsibilities. Best of references. Willing to meet prospective employers for personal interview. Location preferred, Virginia. West Virginia, North Carolina, Tennessee, Kentucky, or Northwestern States. B-9582.

ENGINEER-BUSINESS EXECUTIVE; M. Am. Soc. C. E. Twenty years' experience in design and construction and as business executive, with a successful record in the promotion of construction enterprises. At present, and for the past several years, employed as advisory engineer to the sales division of a large industrial corporation. Seeks association in an executive capacity with a well-established engineering or business firm, preferably where opportunity offers to become a junior partner to take responsibility off older members of the firm. B-8906.

CONSTRUCTION SUPERINTENDENT—CONSTRUCTION ENGINEER, Assoc. M. Am. Soc. C. E.; age 36; single. Experienced on construction of hotels, hospitals, industrial buildings, reinforced concrete structures of all classes. Good organizer, field engineer, construction plant layouts, form design, estimating, etc. Used to working in isolated location. Nine years' tropical experience. Speaks Spanish. Eastern location preferred, but open to any real proposition. B-9215.

CIVIL ENGINEER AND SURVEYOR; Jun. Am. Soc. C. E. Experienced in title surveys, plane-table work, soundings, subdivisions and city planning work; also, some construction, road, and sewer work. Experienced in handling men. Prefers position of assistant or resident engineer. Location, East preferably. B-9819.

MECHANICAL ENGINEER (Graduate), Affiliate, Am. Soc. C. E. Long experience in mechanical work, drawing, and machinery. Thirty months' experience in construction work on dams, highways, surveying, and mapping; two and one-half years, professor of an agricultural college. Can master well correspondence and reports in English and Portuguese. At present with a large American company in Brazil. Will go anywhere. C-1678.

CIVIL ENGINEER, Class of 1927; age 26; available August 1. One year, structural steel inspector. Slight knowledge of Spanish. World War veteran. Wants position in Tropics, preferably with hydro-electric development. C-2813.

GRADUATE CIVIL ENGINEER, 1921, Zurich, Assoc. M. Am. Soc. C. E.; structural and hydraulic designer; age 31; single. Four and one-half years, hydro-electric developments and steam stations; one and one-half years, railroad and highway bridges in steel and concrete; one-half year, reinforced concrete designer for industrial plants. Capable of assuming responsible charge of design and detail. Available August 1, 1927. C-2843.

DESIGNER OR TRANSITMAN; age 24; single; Civil Engineering Graduate of Colorado University. Special in higher structures. Foreman of highway road gang, two years. Location preferred, South America. C-2864.

CIVIL ENGINEER; age 26; single; M. I. T. graduate. Two years' experience, bridge construction. Location, anywhere, preferably foreign work. C-2877.

JUNIOR ENGINEER; age 23; single. Two years, railroad engineering work as rodman, draftsman, and instrumentman; one year, municipal engineering work, engaged in drafting and field work for paving and storm sewers. C-2878.

CIVIL AND TRAFFIC ENGINEER, Jun. Am. Soc. C. E.; graduate in Civil Engineering; age 28; married. Six years' experience in highway construction, general municipal engineering, street traffic control and regulation, and street traffic surveys. Prefers highway and traffic engineering. C-2911.

JUNIOR ENGINEER; age 20; single; graduate (1927) in civil engineering. Experience limited to that received at college. Desirous of making connections with concrete or steel construction company with possibilities of advancement. Location optional. C-2932.

CIVIL ENGINEER; age 21; single; graduate in hydro-electric option of civil engineering course; S. B. degree (1927) from Mass. Inst. Tech. Interested in structural drafting or field work or hydro-electric development. Location, anywhere in the United States. C-2948.

RECENT GRADUATE, Jun. Am. Soc. C. E.; age 24; single. One year's experience in municipal water-works; instrumentman, chief of party, road construction, office and field, investigations. Location, immaterial. C-2971.

CIVIL ENGINEER OR CONSTRUCTION SUPERINTENDENT, M. Am. Soc. C. E.; age 36; married; university graduate, B. S. C. E. degree. Long experience in responsible charge, field and office work covering investigations, design, and construction of drainage and irrigation works, levee construction and river control. Experienced in directing operations of many types of excavating equipment. Location preferred, West or Southwest United States. C-3014-75-A-10.

HIGHWAY AND MUNICIPAL ENGINEER, Assoc. M. Am. Soc. C. E.; age 40; married. Fifteen years' experience on roads, streets, and sewers, as engineer and contractor's superintendent. Capable executive. Recently district engineer of highway department of large Eastern State. Desires connection with contractor or municipality. Location, Eastern or Southern States. C-3017.

RECENT GRADUATE; age 23; single; Graduate Civil and Sanitary Engineer. Desires position with engineering company or municipality. Some experience in highway, street and sewer work. Familiar with operation and design of water purification and sewage disposal plants. Location preferred, Morgantown, W. Va. C-3019.

GRADUATE CIVIL ENGINEER; age 31; married. Five years' experience on highway location and construction of all types, including bridges, also qualified as superintendent of construction. Desires permanent position if obtainable. Location, anywhere in United States. C-3023.

JUNIOR ENGINEER; age 25; single; 1927 graduate in Civil Engineering from recognized technical school. Location preferred, Southeast (Georgia). C-3063.

CONSTRUCTION ENGINEER; age 20; single; graduate, 1926, with B. S. in Civil Engineering from Mississippi A. and M. College. One year special work in construction engineering taken at Mass. Inst. Tech. C-3083.

ASSISTANT DESIGNER (steel and reinforced concrete); age 24; single; graduate, 1926, in civil engineering, with specialization in structural work. One year's steady employment with large building materials manufacturing company in production work. Part time spent in training course, remainder in testing materials and formulating specifications for tests. Location preferred, New York City or Middle West. C-3096.

CHIEF OF PARTY - TOPOGRAPHICAL DRAFTSMAN; age 22; single; Graduate Civil Engineer, capable of acting as chief of party or topographical draftsman, with experience in State highway and city surveying. Location preferred, in or near Philadelphia, Pa. C-3098.

CIVIL ENGINEER; age 24; single; Graduate Civil Engineer, with six years' experience in municipal work, especially street and sewer construction as instrumentman, and as engineering inspector. Has also done drawing and some designing. Location, anywhere. C-3109.

CIVIL ENGINEER, Assoc. M. Am. Soc. C. E.; graduate; age 36; single. Experience in field and office on mill and office buildings as surveyor, gang boss, engineer, designer, and estimator. Three years of college teaching in civil engineering. Available on short notice. Location, anywhere. C-3237.

CONSTRUCTION ENGINEER, Assoc. M. Am. Soc. C. E.; B. S. C. E., C. E.; age 40; single. Experienced in railroad and highway construction, reinforced concrete-steel erection. Two years in oil fields of South America. Past five years in general building construction of hotels, apartment houses, and office buildings. Speaks, writes Spanish. Location preferred, Spanish-speaking country. C-3238.

CONSTRUCTION ENGINEER, Assoc. M. Am. Soc. C. E.; age 42; married; desires change of location. Experience in reinforced concrete, railroad construction, power plants; execution and design. Fourteen years in South America. Perfect knowledge of French and Spanish. Now contracting engineer. Available within two months. Prefers connection with contractor or consulting engineer. Location, United States, Argentine, Brazil, or Central America. C-3259.

CIVIL ENGINEER, M. Am. Soc. C. E.; age 41; married. Technical education, with twenty years' unusually broad training in executive departments of municipal, drainage, and reclamation projects. Consulting engineer for a number of projects. Confidential reports and examinations for investors. Location preferred, New York, or East. C-3284.

Membership

(From April 6 to July 5, 1927)

Additions

	Date of Membership.	
ABEL, Norman August. Chf. Draftsman, Bureau of Roads, Allegheny County (Res., 7722 Brashear St.), Pittsburgh, Pa..	Assoc. M.	June 6, 1927
ABILDSON, Haakon Andreas. Structural Steel Designer, Union Car- bide & Carbon Corporation, New York (Res., 3916 Farragut Rd., Brooklyn), N. Y.....	Jun.	Mar. 14, 1927
ABRAMSON, Joe Mendelsohn. Instrumentman and Insp. with J. W. Billingsley, Box 201, Slidell, La.....	Jun.	June 6, 1927
ACKER, Claire Depew. Supt. of Constr., P. J. Walker Co., San Francisco (Res., 934 San Andreas St., Santa Barbara), Calif. }	Assoc. M.	Jan. 14, 1924
ADAMS, Claude Hardy. Gen. Mgr., J. J. Fredella Co., Inc. (Res., 6 Pearl St.), Glens Falls, N. Y.....	M.	April 18, 1927
ANDERSON, David. (Mott, Hay & Anderson), 9 Idlesleigh House, Caxton St., Westminster, London S. W. 1, England.....	Assoc. M.	Jan. 17, 1927
ANDREWS, George Douglas. Chf. Engr., Bureau of Water-Works and Sewerage, City of Easton, 201 Drake Bldg., Easton, Pa. }	M.	April 18, 1927
ANGILLY, Charles Enoch, Jr. With Bureau of Water-Works and Supply, City of Los Angeles (Res., 1152 West 74th St.), Los Angeles, Calif.....	Assoc. M.	Mar. 7, 1921
ARELLANO, Carlos V. Ave. Jalisco 42, City of Mexico, Mexico..	M.	April 18, 1927
ARMSTRONG, Leroy Whitney. Engr., City of Los Angeles (Res., 5415 Eighth Ave.), Los Angeles, Calif.....	Jun.	June 6, 1927
ARTLEY, Frank Raymond. Hawley, Pa.....	Jun.	Nov. 15, 1926
AUSBAND, George Alseño, Jr. Junior Engr., So. Ry., Box 863, Danville, Va.....	Jun.	April 18, 1927
BACCA, Joseph Paul. City Engr. (Res., 604 Colorado Ave.), Trinidad, Colo.....	Jun.	Dec. 14, 1925
BAHAH, Emil Joseph. 195 Atlantic Ave., Brooklyn, N. Y.....	Assoc. M.	April 18, 1927
BAILEY, Robert William, Jr. Res. Engr., J. E. Sirrine & Co., Greenville, S. C.....	Jun.	April 18, 1927
BARBATO, Theodore. 551 Fifth Ave., New York, N. Y.....	Assoc. M.	June 6, 1927
BAROFISKY, Max. Asst. Engr., Bridge and Sewer Div., Bureau of Highways (Res., 700 South 16th St.), Philadelphia, Pa.....	M.	Mar. 14, 1927
BARTLETT, Charles Henry. Prin. Asst. Engr., James Walker (Res., 6841 Harper Ave.), Chicago, Ill.....	Assoc. M.	April 18, 1927
BECKER, Samuel Levy. Asst. Engr., Bureau of Bldgs. (Res., 1032 Aldus St.), New York, N. Y.....	Jun.	June 6, 1927
BELTZ, Joseph Tyson. Box 76, Canadea, N. Y.....	Jun.	Dec. 3, 1926
BERGHORN, Henry Gerhard. Junior Engr., Clark E. Jacoby Eng. Co., 700 Interstate Bldg., Kansas City, Mo.....	Jun.	June 6, 1927
BESSELIEVE, Edmund Bulkley. San. Engr. and Mgr., Eastern Territory, San. Eng. Div., The Dorr Co., Inc., 247 Park Ave., New York, N. Y.....	Jun.	April 18, 1927
BLACK, Russell Van Nest. Chf. Planning Engr., Regional Plan- ning Federation of Philadelphia Tri-State Dist., 901 Insurance Co. of North America Bldg., Philadelphia, Pa.....	Assoc. M.	Nov. 27, 1917
BOGGS, Irving Hook. With Interstate Amiesite Co., 1015 Union Trust Bldg., Cleveland, Ohio.....	M.	April 18, 1927
BOLAND, Charles Joseph. Engr., C. P. Boland & Co. (Res., 2175 Fourteenth St.), Troy, N. Y.....	Assoc. M.	June 6, 1927
BOYNTON, Claude Brigham. Box Q, Oroville, Calif.....	Assoc. M.	June 6, 1927
BRIGHTON, Harry Augustus. Draftsman, Eng. Dept., P. R. R. (Res., 50 East Washington Lane, Germantown), Philadel- phia, Pa.....	Assoc. M.	Nov. 15, 1926
BROOKS, Samuel William. 194 Linden St., Everett, Mass.....	Assoc. M.	June 6, 1927
BROWN, Leon R. Field Engr., New York State Rys., 287 State St., Rochester, N. Y.....	Jun.	Nov. 15, 1926
BROWN, Roger Chipman. Instrumentman and Chf. of Party, Albert B. Hill, 40 Wall St., New Haven, Conn.....	M.	June 6, 1927
BROWNE, Nolan. Structural Engr., Portland Cement Assoc. (Res., 5447 Richmond Ave.), Dallas, Tex.....	Jun.	June 6, 1927
BRUMBACH, Charles Finney. Cons. Engr., The Highway Eng. Co. Room 407 Title Guaranty Bldg. (Res., 6047 Pershing Ave.), St. Louis, Mo.....	Assoc. M.	June 6, 1927
BUCHANAN, Carl Glenn. Instrumentman, Mo. Pac. R. R., 420 East Capitol Ave., Jefferson City, Mo.....	Assoc. M.	June 6, 1927
BUTLER, Arthur Gray. Gen. Supt. of Constr., Louisville Gas & Elec. Co., 311 West Chestnut St., Louisville, Ky.....	Assoc. M.	Nov. 15, 1926
CAREY, Frank Culpin. Asst. Engr., U. S. Engrs., Mississippi River Comm., Plaquemine, La.....	Jun.	June 23, 1916
CARMAN, Simon. With Cairo Assoc. of Commerce, 1404 Poplar St., Cairo, Ill.....	Assoc. M.	Oct. 9, 1917
	M.	April 18, 1927
	Jun.	June 6, 1927

MEMBERS—(Continued)

		Date of Membership.
CARTWRIGHT, Charles Barnes. Job Supt., Wayne County Road Comm. (Res., 3731 Whitney Ave.), Detroit, Mich.....	Jun. Assoc. M.	June 1, 1920 April 18, 1927
CATES, Walter Herbert. Hydr. and Sales Engr., Western Pipe Steel Co. of California (Res., 5137 Hermosa Ave.), Los Angeles, Calif.....	Jun. Jun.	Mar. 14, 1927 Nov. 15, 1926
CHADWICK, George Robert. 647 Sheridan Rd., Chicago, Ill.....		
CHAMBERS, Thomas Browning. Res. Engr., Robert L. Totten, Inc., Auburn, Ala.....	Assoc. M.	Jan. 17, 1927
CHASE, Arthur Sloan. With State Highway Comm., Chapel Hill, N. C.....	Jun.	Mar. 14, 1927
CLARKE, William Danels. City Engr. and Supt. of Streets, Room 15, City Hall, Bakersfield, Calif.....	M.	April 18, 1927
CLEAVER, Charles Ezra. Pacific, Wash.....	M.	April 18, 1927
CLELLAND, Stanley Holcomb. Div. Engr., State Highway Dept., Sikeston, Mo.....	Assoc. M.	Nov. 15, 1926
CLEVELAND, John Abell. Vice-Pres., The Filer-Cleveland Co., Inc., Box 942, Miami, Fla.....	Assoc. M. M.	Mar. 14, 1916 Jan. 17, 1927
COHEN, Samuel Henry. Chf. Bridge Designer, State Highway Dept., 921 Bergen Ave., Jersey City (Res., 128 President St., Passaic), N. J.....	Jun. Assoc. M.	Oct. 2, 1922 June 6, 1927
COMBS, Lewis Barton. Lt. Commander, C. E. C., U. S. N.; Asst. to Public Works Officer, U. S. Navy Yard, Portsmouth, N. H.	Assoc. M.	June 6, 1927
CONSTANTINE, Basil George. 74 Glenville Ave., Suite 4, Allston, Mass.....	Jun.	Dec. 3, 1926
CORCORAN, Louis Paul. Field Engr., Portland Cement Assoc., 33 West Grand Ave., Chicago, Ill.....	Jun.	April 18, 1927
COURTER, Joseph Allen, Jr. Instrumentman, Town of Montclair (Res., 71 Cedar Ave.), Montclair, N. J.....	Jun.	June 6, 1927
CRAGGS, Clyde. Contr. Engr. and Eng. Consultant, Worden Allen Co., Milwaukee, Wis. (Res., 1829 East 5th St., Duluth, Minn.).	Assoc. M.	Jan. 17, 1927
CRANDELL, John Stanley. Prof., Highway Eng., Univ. of Illinois, Urbana, Ill.....	M.	June 6, 1927
CRIST, Marion Lowell. Asst. Engr., Burns-McDonnell-Smith (Res., 1026 1/4 Laguna Ave.), Los Angeles, Calif.....	Jun.	April 18, 1927
CROCKER, Clarke Wilkins. Salesman, The A. Leitz Co., 61 Post St., San Francisco (Res., 1505 Marin Ave., Berkeley), Calif..	Assoc. M.	Mar. 14, 1927
CRONIN, Joseph Francis. Maintenance Superv., Tol. & West. Ry., Sylvania, Ohio.....	Assoc. M.	Nov. 15, 1926
CULLMORE, William Henry Harrison. 3d. Office Engr., Bureau of Highways (Res., 3114 Frederick Rd.), Baltimore, Md.....	Assoc. M.	April 18, 1927
CURETON, Ralph Barksdale. Res. Engr., J. E. Sirrine & Co. (Res., 209 Butler Ave.), Greenville, S. C.....	Assoc. M.	June 6, 1927
DAVIS, Frederick Calvin. Structural Engr., Gladding, McBean & Co. (Res., 515 Buena Vista Ave.), San Francisco, Calif.....	Affiliate M.	Jan. 7, 1913 April 18, 1927
DAWSON, Francis Murray. Prof. of Hydraulics, Univ. of Kansas (Res., 1655 Mississippi St.), Lawrence, Kans.....	M.	April 18, 1927
DEAN, John Bowen. Asst. Engr., Water Div. (Res., 4533a West Papin St.), St. Louis, Mo.....	M.	April 18, 1927
DAREMER, James Silas. Office, Valuation Engr., D. & G. R. West. R. R. (Res., 330 East 19th Ave.), Denver, Colo.....	Assoc. M.	Mar. 14, 1927
DEYOE, Alden Warren. Office Engr. and Draftsman on Stevenson Creek Experimental Arch Dam (Res., 741 South New Hamp- shire Ave.), Los Angeles, Calif.....	Jun.	June 6, 1927
DOOLITTLE, Harold Lukens. Chf. Designing Engr., Southern Cali- fornia Edison Co., Los Angeles (Res., 1520 Rose Villa St., Pasadena), Calif.....	M.	April 18, 1927
DORRANCE, William Henry. 4th. Designing Engr., Mason L. Brown & Son, 605 Capitol Theatre Bldg. (Res., 3825 Humphrey Ave.), Detroit, Mich.....	Assoc. M.	Nov. 15, 1926
DOWNEY, Samuel Boyd. Chf. Draftsman, M. A. Long Constr. Co. (Res., 3212 Ellerslie Ave.), Baltimore, Md.....	Assoc. M.	June 6, 1927
DRAPEAU, Lucien Joseph. 139 MacDougal St., New York, N. Y.	Jun.	Nov. 15, 1926
DUNCAN, Carroll Allen. Res. Const. Supt., Sanderson & Porter, 52 William St., New York, N. Y.....	M.	April 18, 1927
ELBIN, Guy Herbert. Prof., Civ. Eng., Ohio Northern Univ. (Res., 722 South Johnson St.), Ada, Ohio.....	M.	April 18, 1927
ELLIOTT, John Earle. Engr., Trenton Plant, Am. Bridge Co. (Res., 1530 Riverside Drive), Trenton, N. J.....	M.	June 6, 1927
ELLIS, Charles Francis. With J. M. Spain, Jackson, Miss.....	Jun.	Dec. 3, 1926
EYRE, Roy Smallwood. Res. Engr., Strauss Bascul Bridge Co., Box 616, Green Cove Springs, Fla.....	Assoc. M.	April 18, 1927
FARR, Forrest Willard. 6407 Clearview St., Philadelphia, Pa....	Jun.	Mar. 14, 1927
FELDMANN, Edward Henry. Asst. Engr., W. W. Young (Res., 53 Waller Ave.), White Plains, N. Y.....	Jun.	April 18, 1927
FERNEAU, Thomas Edgar. Acting Res. Engr., State Highway Comm., Lathrop, Calif.....	Jun.	April 18, 1927
FINKE, Ralph William. 834 East 68th St., Seattle, Wash.....	Jun.	Mar. 14, 1927
FISHBECK, Dewey George. Sales Engr., Kalman Steel Co., Union Bldg. (Res., 245 Lincoln Ave.), Syracuse, N. Y.....	Jun. Assoc. M.	Mar. 12, 1923 June 6, 1927

MEMBERS—(Continued)

		Date of Membership.
FISHER, Samuel Morton. Asst. to Field Engr., Los Angeles County Flood Control Dist., 402 East Badillo St., Covina, Calif.....	M.	April 18, 1927
FOX, Harold Kinne. Supt. of Constr., San Joaquin Light & Power Corporation, Fresno, Calif.....	Assoc. M.	July 6, 1925
FREEMAN, Cassius William. With Henry R. Buck, Hartford (Res., Hockanum), Conn.....	M.	Mar. 14, 1927
FREEMAN, William Williams Keen. Junior Engr., U. G. I. Contr. Co. (Res., 33 Benezet St., Chestnut Hill), Philadelphia, Pa....	Jun.	June 6, 1927
FREIHOFNER, Anton. 126 Browne St., Brookline, Mass.....	Assoc. M.	April 18, 1927
FRERET, William Alfred, Jr. Care, Sandquist & Snow, Inc., Haas Bldg., Alexandria, La.....	Assoc. M.	June 6, 1927
	Assoc. M.	April 18, 1927
GATLEY, Harold Kent. Chf. Draftsman and Designer, Hoad, Decker, Shoecraft & Drury, Box 117, Ann Arbor, Mich.....	Assoc. M.	April 18, 1927
GHEKAS, Evangelos. Municipal Bldg., Montclair, N. J.....	Jun.	Dec. 3, 1926
GILBOY, Glennon. Research Asst., Civ. Eng. Dept., Mass. Inst. Tech., Cambridge (Res., 397 Commonwealth Ave., Boston), Mass.....	Jun.	April 18, 1927
GILCHRIST, James. Engr. and Contr., 621 Twenty-fifth St., Santa Monica, Calif.....	M.	June 6, 1927
GILKEY, Herbert James. Associate Prof., Civ. Eng., Univ. of Colorado, Room 205 Eng. Bldg., No. 1, Univ. of Colorado, Boulder, Colo.....	Assoc. M.	Sept. 12, 1921
	M.	April 18, 1927
GLADNEY, Thomas Glenn. Prof., Civ. Eng., Mississippi Agri. and Mech. Coll., A. and M. College, Miss.....	M.	June 6, 1927
GOLDSPINNER, William. 333 League St., Philadelphia, Pa.....	Jun.	Mar. 14, 1927
GOULD, Edwin Fish. Plant Engr., French Battery Co., 441 North Baldwin St., Madison, Wis.....	Jun.	Jan. 17, 1921
	Assoc. M.	June 6, 1927
GRAVES, Hershel Douglas. Ry. Draftsman, City of Seattle, 507 County City Bldg., Seattle, Wash.....	Jun.	Jan. 17, 1927
GREEN, Roy Melvin. Pres. and Mgr., Western Laboratories (Res., 826 Q St.), Lincoln, Nebr.....	Assoc. M.	Nov. 25, 1919
	M.	April 18, 1927
GREIG, John Martin Macfie. Designer, Sanborn & Bogert, New York (Res., 101 Fairview Ave., Port Washington), N. Y.	M.	June 6, 1927
GRIESEL, Heinrich. Cons. Engr. in United States for Gelsenkirchener Min. Co., Inc., and Siemens-Bauunion, 75 West St., New York, N. Y.....		
HADLEY, Allen Stacy. Cons. Engr., Nippon Oil Co., Ltd., Marunouchi, Tokyo, Japan.....	M.	June 6, 1927
	Assoc. M.	June 18, 1918
HAIGHT, Silas Maxwell. Engr., Highway Products & Mfg. Co., Inc., 739 Baldwin St., Elmira, N. Y.....	M.	April 18, 1927
HART, Philip. Treas., Pacific Bridge Co., East Water and Salmon St., Portland, Ore.....	M.	June 6, 1927
	M.	April 18, 1927
	Jun.	Dec. 6, 1920
HATCH, Donald Monroe. Supt., Dept. of Water Supply, City of Jackson (Res., 506 First St.), Jackson, Mich.....	Assoc. M.	May 8, 1922
	M.	April 18, 1927
HATFIELD, William Durrell. Supt., Sewage Disposal Plant (Res., 249 Linden Pl.), Decatur, Ill.....	Assoc. M.	April 18, 1927
HAWKINS, Stanley Morrison. Asst. Engr., Frederick K. Wing Co., Orchard Park, N. Y.....	Jun.	April 18, 1927
HAWKINS, Wyatt Swift. Cons. Engr., Gulfport, Miss.....	M.	June 6, 1927
HEDGER, Harold Everett. Res. Engr., Los Angeles County Flood Control Dist. (Res., 1456 Elm Ave.), Long Beach, Calif....	Assoc. M.	April 18, 1927
HELM, Richard Thomas. Res. Engr., Hoffman-Henon Co., Philadelphia (Res. 207 West Wood St., Norristown), Pa.....	Jun.	Nov. 15, 1926
HEMPHILL, Ora L. Asst. State Highway Engr. (Res., 2500 West 14th St.), Little Rock, Ark.....	Assoc. M.	April 18, 1927
HENDERSON, Paul Fleming. With Cook-O'Brien Const. Co., West 1024 Fourth Ave., Spokane, Wash.....	Assoc. M.	June 6, 1927
HERPIN, Joseph Ovey. Superv. Engr., City of Port Arthur (Res., 225 Lake Shore Drive), Port Arthur, Tex.....	Assoc. M.	June 6, 1927
HEVENOR, Gloster Parnell. Secy-Treas., Hevenor & Weller, Inc., 5 St. Paul St. (Res., 245 Melrose St.), Rochester, N. Y.....	Assoc. M.	Nov. 26, 1923
	M.	April 18, 1927
HILTON, Ralph Livingston. 313 Main St., Greenville, Pa.....	Jun.	Dec. 3, 1926
HODGES, McCloud Bradford. Res. Engr., Uvalde and Medina Counties, Uvalde, Tex.....	Assoc. M.	June 6, 1927
HOELSCHER, Randolph Philip. Asst. Prof., Gen. Eng. Drawing, Univ. of Illinois (Res., 1107 South Busey Ave.), Urbana, Ill....	M.	April 18, 1927
HOFFMAN, Dor Marion. Chf. Surv., U. S. Forest Service, Ferry Bldg., San Francisco, Calif.....	Assoc. M.	Mar. 14, 1927
HOLMES, William Fletcher. Sales Engr., Kalman Steel Co., 404 Candler Bldg., Atlanta, Ga.....	Assoc. M.	June 6, 1927
JAMES, James Spier. City Engr. (Res., 1315 Benito Ave.), Burlingame, Calif.....	Assoc. M.	June 6, 1927
JARVIS, Walter Monroe. Dist. Engr., State Highway Dept., Bowling Green, Ky.....	Jun.	Aug. 31, 1925
	Assoc. M.	Mar. 14, 1927
JENKINS, Carter. Asst. Engr., W. H. Allen, 1484 Miner St., Des Plaines, Ill.....	Assoc. M.	June 6, 1927
JERZ, Walter John. 12824 La Salle Boulevard, Detroit, Mich.....	Jun.	Mar. 14, 1927
JEWEL, Warwick Riner. Cons. Engr., 625 Genesee Bldg., Buffalo, N. Y.....	M.	April 18, 1927

MEMBERS—(Continued)

Date of Membership.

JOHNSON, Andrew Kinghorn. Asst. Engr., Office of Pres., Borough of Queens, 190-24 One Hundred and Eleventh Rd., Hollis, N. Y.	M.	June 6, 1927
JOHNSON, John Gunnar Amandus. Designer, Modjeski & Moran, 121 East 38th St., New York (Res., 1294 Schenectady Ave., Brooklyn), N. Y.	Jun. Assoc. M.	April 7, 1924 June 6, 1927
JONES, John Edgar. "Claremont," 42 Lyndon Rd., Belvedere, Kent, England.	Jun.	April 18, 1927
JUSSEN, Herbert Charles. Sales Dept. Head, Elastite Expansion Joint, The Philip Carey Co., Lockland (Res., 3 Albert Pl., Mariemont), Cincinnati, Ohio.	M.	June 6, 1927
KAMINSKY, Morris Moses. With W. J. Holliday & Co., Indianapolis, Ind.	Jun.	Nov. 15, 1926
KANG, Shih Cheng. Prof., Structural Eng., Fuh Tan Univ., Kiangwan (Res., 459 Medhurst Rd.), Shanghai, China.	Jun. Assoc. M.	July 9, 1923 Mar. 14, 1927
KEENAN, James Nicholas. 285 Madison Ave., New York, N. Y.	M.	April 18, 1927
KENDALL, Frank B. Asst. and Chf. Engr., Frank L. Meline, Inc., 3d Floor, Sun Bldg., Los Angeles, Calif.	Assoc. M.	Feb. 4, 1914
KENNEDY, Arthur Ross. Pierce, Idaho.	M. Assoc. M.	April 18, 1927 April 18, 1927
KING, Otto Larue. With Public Service Co. of Northern Illinois, 1611-21 Orrington Ave., Evanston, Ill.	Jun.	April 18, 1927
KNIESTEDT, Ewald Matthew. 4944 Forest Park Boulevard, St. Louis, Mo.	Jun.	Nov. 15, 1926
KOZIERSKI, Stanislas Felix. Civ. Engr., 420 West 116th St., New York, N. Y.	M.	April 18, 1927
LAFFERTY, Edwin Forrest. Chf. of Party, McClave & McClave, 367 Greenmount Ave., Grantwood, N. J.	Jun.	June 6, 1927
LATHAN, George Robert. Pequannock, N. J.	Jun.	Nov. 15, 1926
LEVIS, Joseph Louis. 30 Bellevue St., Dorchester, Mass.	Jun.	Oct. 1, 1926
LIGHTBURN, Charles McConnell. Valuation Engr., D. & R. G. W. R., Equitable Bldg., Denver, Colo.	M.	June 6, 1927
LIVESAY, Wallace Bright. Archt. (Livesay & Wiedemann), 607 San Jacinto Life Bldg., Beaumont, Tex.	Assoc. M.	Nov. 21, 1921
LOFTIN, Harold Turner. Draftsman, City of Houston (Res., 1307 Arlington St.), Houston, Tex.	M.	Mar. 14, 1927
LONGSDORF, Paul Wright. (Longsdorf & Patterson, Inc.), Church Rd. and Park Ave., Elkins Park, Pa.	Jun.	June 6, 1927
LOVERING, Harry Douglas. Secy. and Treas., Lovering-Longbotham Co., Inc., 605 Builders Exchange Bldg. (Res., 14 Benhill Rd.), St. Paul, Minn.	Assoc. M.	April 18, 1927 Sept. 2, 1914 Oct. 14, 1919
LUKE, Francis William. Cons. Engr. (Holgate & Luke), Druids' Bldgs., Wellington, New Zealand.	M.	April 18, 1927
LUKENS, Richard Russell. Chf. of Party, U. S. Coast and Geodetic Survey, Washington, D. C.	Assoc. M.	Mar. 14, 1927
MACBEAN, James Roy. Res. Engr., State Highway Dept., Camden (Res. 104 Seventh Ave., Haddon Heights), N. J.	M.	Mar. 14, 1927
MACPHAIL, Jeffrey Burland. With Power Eng. Co., (Res., 26 Selkirk Ave.), Montreal, Que., Canada.	Assoc. M.	June 6, 1927
MCCORMICK, William. Asst. Engr. in Chf. Engr.'s Office, Reading Co. (Res., 4824 North 10th St.), Philadelphia, Pa.	Assoc. M.	April 18, 1927
McFADDEN, Henry Samuel. Head, Kansas Eng. Co. (Res., 1233 Western Ave.), Topeka, Kans.	M.	June 6, 1927
MCGAREY, Thomas Francis, Jr. Gen. Supt., Staten Island Constr. Co., 27 Meadow St., Garden City, N. Y.	Assoc. M.	June 6, 1927
McGUIRE, Donald David. Asst. Engr. of Tests, State Dept. of Highways, 418 Sixth Ave., North, Nashville, Tenn.	Jun.	Aug. 4, 1924
McNAMARA, Edwin Lally. 1932 East 97th St., Cleveland, Ohio.	Assoc. M.	June 6, 1927
McNAMEE, Harold Grafton. Asst. Engr., San. Dist. of Chicago, 910 South Michigan Ave., Chicago, Ill.	Jun.	April 12, 1926
MAGOON, Estus Hubert. San Engr. in Central America for International Health Board of Rockefeller Foundation, Box 2002, Ancon, Canal Zone.	Assoc. M.	June 6, 1927
MANSSELL, Benjamin Thomas. Draftsman, P. R. R., Office of Chf. Engr. (Res., 7030 Marsden St., Tacony), Philadelphia, Pa.	Assoc. M.	Mar. 12, 1923
MARAK, William Henry. Asst. City Engr., City Hall (Res., 722 North Harrison St.), Little Rock, Ark.	M.	April 18, 1927
MAYER, Edward Bromley. Asst. Engr., Bureau of Water-Works and Supply, 207 South Broadway, Los Angeles, Calif.	Jun.	June 6, 1927
MELTZER, Fred Carl. Apartado 2016, City of Mexico, Mexico.	Assoc. M.	April 18, 1927
MESSNER, Edward Grant. Asst. Engr., Allegheny County Bureau of Bridges, 519 Smithfield St. (Res., 324 Main St.), Pittsburgh, Pa.	Jun. Assoc. M.	April 7, 1924 April 18, 1927
MEYER, Carl Bernhard. Office Engr., Div. of Eng. and Irrig., State of California (Res., 1715 Que. St.), Sacramento, Calif.	Jun.	April 18, 1927
MILLER, Arthur Phillips. Senior Draftsman, Dept. of Water Supply (Res., 9373 East Jefferson Ave.), Detroit, Mich.	Assoc. M.	April 18, 1927
MITCHELL, Thomas Joseph. Asst. Prof., Geodesy and Surveying, Eng. Coll., Univ. of Michigan (Res., 1129 Granger Ave.), Ann Arbor, Mich.	Jun.	April 18, 1927
MITCHELL, William Harvey. Engr. Insp., Consolidated Gas, Elec. Light & Power Co. (Res., 1630 North Bond St.), Baltimore, Md.	Assoc. M.	Mar. 14, 1927

MEMBERSHIP—(Continued)

		Date of Membership.
MONROE, Robert Louis. Care, New England Power Const. Co., Design Dept., 35 Harvard St., Worcester, Mass.	Jun. Aug. 28, 1922	
MOORE, Morrison Bert, Jr. Draftsman, Valuation Dept., Morris Knowles, Inc., Pittsburgh (Res., 709 Laughlin Ave., Wood- lawn), Pa.	Assoc. M. June 6, 1927	
MORGAN, Alfred Kenneth. Asst. Supt., Barney-Ahlers Constr. Co., 110 West 40th St., New York, N. Y. (Res., 4207 Graham Ave., Astoria), N. Y.	Jun. June 6, 1927	
MORRILL, Albert Harrison. Asst. Res. Engr., The Port of New York Authority, 4850 Arthur Kill Rd., Tottenville, N. Y.	Jun. Nov. 15, 1926	
MORRISON, Allen James. Computer, Shell Co. of California (Res., 990 Elden Ave.), Los Angeles, Calif.	Assoc. M. June 6, 1927	
MUHS, Fred Ross, Jr. 26 The Uplands, Berkeley, Calif.	Jun. June 6, 1927	
NELSON, George Alvin. Aid, U. S. Coast and Geodetic Survey, U. S. S. <i>Discoverer</i> , Honolulu, Hawaii.	Jun. Dec. 3, 1926	
NELSON, Henning F. Asst. Res. Engr. for J. A. L. Waddell (Res., 58 Granite St.), Bath, Pa.	Jun. Mar. 14, 1927	
NELSON, Samuel Baldwin Smith. Topographic Draftsman, City of Los Angeles (Res., 1516 North Fairfax Ave.), Los Angeles, Calif.	Assoc. M. June 6, 1927	
NEWTON, Ray Fred. Draftsman, City of Portland (Res., 1344 North East 33d St.), Portland, Ore.	Jun. April 18, 1927	
NOBLE, Charles MacIntosh. Designer, Port of New York Authority, 75 West St., New York, N. Y.	Jun. Dec. 3, 1926	
NOBMANN, Clarence John. Structural Designer, Shell Co. of Cali- fornia, San Francisco (Res., 3235 Bayo Vista Ave., Alameda), Calif.	Assoc. M. June 6, 1927	
NORLING, Sven Albert. Cons. Engr., Masonic Temple, Excelsior, Minn.	Assoc. M. June 6, 1927	
NUTTALL, John Henry. Prin. Asst. Engr. and Asst. Chf., Bureau of Street Cleaning (Res., 1618 Unity St.), Philadelphia, Pa.	Assoc. M. April 18, 1927	
O'LEARY, Joseph Thomas. 239 Ashdale St., Philadelphia, Pa.	Jun. April 18, 1927	
ONSTOTT, Virgil Samms. Asst. Engr., State Dept. of Highways, Court House, Beaver, Pa.	Assoc. M. Mar. 14, 1927	
PAFFRATH, Ernst. Asst. Sewer Commr. of St. Louis (Res., 5348 Nottingham Ave.), St. Louis, Mo.	Assoc. M. April 18, 1927	
PARRATT, Sydney Lloyd. Chf., Topographer for City of Los Angeles, Box 218, Beaumont, Calif.	Assoc. M. Mar. 14, 1927	
PARSON, Arvid Ferdinand. Estimator, S. P. Co., Carrolls, Wash. PEDERSEN, Hans Victor. Gen. Mgr., Marshalltown Water-Works (Res., 807 West State St.), Marshalltown, Iowa.	Jun. Mar. 14, 1927	
PEET, Gerald Dayton. Chf. Engr., Wallace & Tiernan Co., Inc., Newark (Res., 12 Berkeley Pl., Montclair), N. J.	Assoc. M. April 18, 1927	
PEIRSON, Henry Conwell. Testing Engr., Eastern Clay Products Assoc., 906 Colonial Trust Bldg., Philadelphia, Pa.	Assoc. M. April 18, 1927	
PETERS, Simon Cameron. Chf. Engr., The Edward E. Gillen Co., 604 Mayer Bldg., Milwaukee, Wis.	Assoc. M. Mar. 14, 1927	
PETERSON, Otto Wallace. Engr. of Gen. Coastr. Pacific Gas & Elec. Co., San Francisco (Res., 6209 Rockwell St., Oakland), Calif.	Assoc. M. June 6, 1927	
PLUM, Svend Munk. Draftsman, Gordon & Kaelber, 311 Alex- ander St., Rochester, N. Y.	Assoc. M. Oct. 31, 1911	
POOLE, Lester Jackson. Draftsman and Designer, The Great Atlantic & Pacific Tea Co., Box 290, City Hall Station, New York (Res., 4136 Landing Rd., Little Neck), N. J.	M. Mar. 14, 1927	
POU, Frank Eugene Stanton. Draftsman, State Highway Dept., 1602 Oxmoor Rd., Homewood, Birmingham, Ala.	Jun. Oct. 14, 1919	
PRINZ, Robert Bleser. Asst. Engr., Div. of Water (Res., 425 South Jackson St.), Dayton, Ohio.	Assoc. M. April 18, 1927	
QUADE, Maurice Northrop. Draftsman, J. A. L. Waddell, 150 Broadway, New York, N. Y. (Res., 217 North 7th St., Newark, N. J.)	Jun. April 18, 1927	
RAWN, William Peter. County Engr., Washington County; City Engr., Washington, Iowa.	Assoc. M. April 18, 1927	
REEDER, Lynn Hadley. Asst. on Engr. Corps, P. R. R., 334 Lantwyn Lane, Narberth, Pa.	Assoc. M. April 18, 1927	
REEVES, Glenn Stanton. Asst. Chf. Engr., North Jersey Transit Comm., 405 Jersey Journal Bldg., Jersey City, N. J.	Assoc. M. Mar. 16, 1925	
REUTER, Ernest. 865 Seventh Ave., Astoria, N. Y.	M. April 18, 1927	
REX, Harry McCahan. Chf. Engr., Amiesite Asphalt Co. of America, 235 South 15th St., Philadelphia, Pa.	Jun. April 18, 1927	
RIBBLE, John Marshall. 192d St. and Bennett Ave., New York, N. Y.	Assoc. M. Mar. 14, 1927	
RIHL, Walter Alday. Engr., John A. Rihl (Res., 2348 East Norris St.), Philadelphia, Pa.	Assoc. M. Nov. 15, 1926	
ROSS, Charles Raymond. State Field Supt. with State Archt. and Engr., 1191 Virginia Ave., Columbus, Ohio.	Jun. April 18, 1927	
SAILER, Robert. Draftsman and Bridge Designer, Harrington, Howard & Ash (Res., 4208 Campbell St.), Kansas City, Mo.	Jun. Aug. 31, 1925	
	Assoc. M. June 6, 1927	
	Jun. April 18, 1927	

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MEMBERS—(Continued)

		Date of Membership.
SANDERSON, Theodore Harold.	Asst. Engr., B. & O. R. R. (Res., 1005 Salem Ave.), Dayton, Ohio.....	Jun. April 18, 1927
SCALES, William Edward.	New York Sales Mgr., Giant Portland Cement Co., 30 Church St., New York, N. Y.....	Affiliate Mar. 14, 1927
SCHLEMMER, Oren Henry.	Field Engr., Hoad, Decker, Shoecraft & Drury (Res., 1219 Drury Rd.), Ann Arbor, Mich.....	Jun. June 6, 1927
SCHNITZ, Jack Lewis.	Asst. Civ. and Hydr. Engr., Commonwealth Power Corporation, Jackson, Mich.....	Assoc. M. April 18, 1927
SCHOEN, Bertalan.	Engr., John T. McCoy, Inc., 154 Nassau St. (Res., 2240 Ryer Ave.), New York, N. Y.....	Jun. Mar. 16, 1925
SCHOEN, Harry.	30 Olive Pl., Forest Hills, N. Y.....	Assoc. M. Mar. 14, 1927
SEIBERT, Edward Clever.	Lt. Commander, C. E. C., U. S. N.; Public Works Officer, Naval Operating Base, Key West, Fla. and of 7th Naval Dist., U. S. Naval Station, Key West, Fla.....	Jun. June 6, 1927
SERRURIER, Mark Usona.	1803 North Gramercy Pl., Los An- geles, Calif.....	Assoc. M. Jan. 17, 1921
SEWELL, Harold Arthur.	Engr., Callispel Light & Power Co.; Engr. and Mgr., Interstate Eng. & Const. Co., Newport, Wash..	M. April 18, 1927
SHAW, Hobart Doane.	City Engr., Box 25, Gulfport, Miss.....	Assoc. M. Nov. 28, 1916
SHAW, John Archibald.	Cons. Engr., Hong Kong, China.....	M. April 18, 1927
SHORT, W. Irwin.	Engr., F. G. Ross, Pittsburgh (Res., 1415 Elm St., Wilkensburg), Pa.....	Assoc. M. July 2, 1913
SIMPSON, Robert Harris.	Chf. Engr., Dept. of Public Service (Res., 1748 Summit St.), Columbus, Ohio.....	M. Jan. 17, 1927
SMEED, Harold Franklin.	Pres. Heyenor & Weller, Inc. (Res., 810 Post Ave.), Rochester, N. Y.....	Jun. June 6, 1927
SMITH, Douglass Lee.	Associate of H. S. Smith, 1003 Coal Exchange Bldg., Wilkes-Barre, Pa.....	M. April 18, 1927
SMITH, Harry Abraham.	Asst. Engr., Water-Works Dept., Water Engr.'s Dept., Old Court House, Durban, Union of South Africa.....	Assoc. M. April 18, 1927
SMITH, John Kenyon.	Junior Engr., Board of Transportation, New York (Res., 33 Thornd Ave., Hicksville), N. Y.....	Assoc. M. Mar. 14, 1927
SMITH, Reuben William.	Chf. Cons. Dept., Protexol Corporation, Kenilworth (Res., 311 Drake Ave., Roselle), N. J.....	Assoc. M. Mar. 14, 1927
SMITH, William Ware.	Draftsman, Bridge Dept., State Highway Comm. (Res., 2112 Rose Ave.), Richmond, Va.....	Jun. April 18, 1927
SMITH, Wilson Goodridge.	Junior Engr., San. Dist. of Chicago Res., 1400 East 53d St.), Chicago, Ill.....	Jun. April 18, 1927
SORENSEN, Alton Harry.	108 North Romine St., Urbana, Ill.....	Jun. Mar. 14, 1927
SORENSEN, John.	With U. P. R. R. (Res., 2120 Spencer St.), Omaha, Nebr.....	Assoc. M. Mar. 14, 1927
SPAULDING, Paul Pickering.	Deputy Chf. Bldg. Insp., City of Worcester, Room 35 City Hall (Res., 37 Lenox St.), Worcester, Mass.....	Assoc. M. June 6, 1927
STEWART, Franklin Dean.	Asst. Engr., State Dept. of Health, Columbus, Ohio.....	Assoc. M. April 18, 1927
STONE, Walter Maxwell.	Engr., Stone & Webster, Inc., 147 Milk St., Boston (Res., 127 Summer St., Waltham), Mass.....	M. June 6, 1927
STOUT, Oscar Van Pelt.	Agt.-Asst., Div. of Agri. Eng., Bureau of Public Roads, U. S. Dept. of Agriculture, Box 180, Berkeley, Calif.....	M. April 18, 1927
SUEHRSTEDT, Henry George.	Structural Engr., Kelker De Leuw & Co., 111 West Washington St., Chicago (Res., 130 North Vine St., Hinsdale), Ill.....	Jun. Nov. 26, 1923
SUN, Arthur Kwang-I.	Box 2498, Boston, Mass.....	Assoc. M. June 6, 1927
TARK, Marcus Bogislaf.	Engr., Link-Belt Co. (Res., 5125 Syden- ham St.), Philadelphia, Pa.....	Jun. April 18, 1927
TARTT, Phillips Branch.	Cons. Engr., Moore Bldg., San Antonio, Tex.....	M. June 6, 1927
TERRADAS YLLA, Esteban.	Cons. Engr., Corcega 331, Barcelona, Spain.....	Assoc. M. April 18, 1927
THACKER, Gerald.	3769-C Ruby St., Oakland, Calif.....	M. Mar. 14, 1927
THOMPSON, Murray Nixon.	Box 577, Newport, Wash.....	Jun. June 6, 1927
TYLER, Ivan Louis.	Chf. of Party, Southern California Edison Co., Camp 7, Big Creek, Calif.....	Assoc. M. June 6, 1927
ULLIAN, Hyman Benjamin.	(Goldman & Ullian), 2522 First National Bank Bldg., Detroit, Mich.....	Assoc. M. April 18, 1927
URIBE GAUGUIN, Pedro.	Prof., School of Eng., National Univ. of Bogota, 476 A Bis, Carrera 8, Bogota (Chapinero), Colombia.	M. June 6, 1927
VAGTBORG, Harold Alfred.	Constr. Supt., C. J. Carlson (Res., 251 West 79th St.), Chicago, Ill.....	M. Mar. 14, 1927
VAN GIESON, William Hogencamp.	Cons. Engr. (Van Gieson & Downie), 1440 Broadway, New York, N. Y. (Res., 41 Center St., Hillside, N. J.).....	Jun. April 18, 1927
VANONI, Vito August.	346 West 53d St., Los Angeles, Calif....	M. Mar. 14, 1927
VEST, William Edward.	Supt., Charlotte Water-Works, (Res., 806 West Trade St.), Charlotte, N. C.....	Jun. Mar. 14, 1927

MEMBERS—(Continued)		Date of Membership.	
WALKER, William Higham. Engr., The Dravo Contr. Co. (Res., 529 North 6th St.), Steubenville, Ohio.....	Jun.	June 6, 1927	
WALLACE, Allan Lanham. With State Highway Dept., General Delivery, Decatur, Ala.....	Assoc. M.	June 6, 1927	
WALTHER, D. J. Logsdon. Asst. Engr., Windes & Marsh (Res., 1625 Central Ave.), Wilmette, Ill.....	Assoc. M.	June 6, 1927	
WARD, Vernon Champlin. Mgr. of Sales, Steel Constr. Dept., Jones & Laughlin Steel Corporation, 311 Ross St., Pittsburgh, Pa.....	M.	April 18, 1927	
WEBER, George, Jr. Hydrographer, State Dept. of Forests and Waters (Res., 1408 North 2d St.), Harrisburg, Pa.....	Jun.	April 18, 1927	
WEIR, Carl Leslie. Const. Engr. and Archt., Am. Ice Co., 41 East 42d St., New York, N. Y.....	Assoc. M.	April 14, 1919	
WELLE, Eberhard. Asst. Designing Engr., New York State Bridge & Tunnel Comm. and New Jersey Interstate Bridge & Tunnel Comm., 76 Varick St., 7th Floor, New York, N. Y.....	M.	April 18, 1927	
WESSMAN, Harold Everett. Care, J. A. L. Waddell, 150 Broadway, New York, N. Y.....	Assoc. M.	May 28, 1923	
WESTBY, Harvey Orlando. With U. S. Coast and Geodetic Survey, S. S. Surveyor, 202 Burke Bldg., Seattle, Wash.....	M.	April 18, 1927	
WHALAND, Norman Delbert. 10 Oak Terrace, Avon by the Sea, N. J.....	Jun.	Mar. 14, 1927	
WHELAN, Patrick Aloysius. 272 South Broadway, Yonkers, N. Y.....	Jun.	April 18, 1927	
WHITNEY, Frederick Clifford. Asst. Engr., William B. Ittner St. Louis, Mo.....	Jun.	Mar. 14, 1927	
WIANT, Paul Prince. Care, Fukien Constr. Bureau, Foochow, China.....	Assoc. M.	Mar. 14, 1927	
WICKHAM, Joseph John. Asst. Engr., Morris Knowles, Inc. (Res., 731 South Negley Ave.), Pittsburgh, Pa.....	M.	April 14, 1919	
WILKES, Peter Frederick. Estimator, The Austin Co. of California (Res., 777 East Washington St.), Los Angeles, Calif.....	M.	April 18, 1927	
WILL, Curt Hesse. Draftsman, Chicago Bridge & Iron Works (Res., 105 Shenango St.), Greenville, Pa.....	Assoc. M.	April 18, 1927	
WILLIAMS, Frederick Crawford. Chf. Engr., Board of Public Works, Pawtucket, R. I.....	Jun.	April 18, 1927	
WILLIAMS, Herbert Howard, Jr. 207 North Union Ave., Cranford, N. J.....	M.	Jan. 17, 1927	
WINANT, Lawrence. Asst. Engr., Modjeski & Moran, 103 Union St. (Res., 9 Holmes St.), Poughkeepsie, N. Y.....	Jun.	Dec. 3, 1926	
WINSTON, Charles A. Township Engr. of Livingston; (Freeman & Winston), Macintosh Bldg., West Orange, N. J.....	Assoc. M.	April 18, 1927	
WISDA, John Albert. College Apprentice, McClintic-Marshall Constr. Co., 7934 Dante Ave., Chicago, Ill.....	Assoc. M.	April 19, 1920	
WITT, Charles Victor. Pres., Witt Steel Co., Greensburg, Pa.....	M.	April 18, 1927	
WOLF, Edward William. Engr. and Surv., Wallace H. Halsey, Little Plains Rd., Southampton, N. Y.....	Jun.	Nov. 15, 1926	
WOOD, Lewis Keyser. Asst. Engr., California Bridge & Tunnel Co. (Res., 2119 Addison St.), Berkeley, Calif.....	M.	April 18, 1927	
WRIGHT, Harry McDonald. Asst. Engr., V. P. Knott (Res., 2105 West 16th St.), Little Rock, Ark.....	Assoc. M.	April 18, 1927	
ZEHNER, John Randall. Accountant, Turner Constr. Co., 4951 West 22d St., Cicero, Ill.....	Jun.	Mar. 14, 1927	
ZUSI, Charles Joseph. Vice-Pres. and Asst. Chf. Engr., Container Testing Laboratories, Inc., Box 576, Rockaway, N. J.....	Jun.	May 28, 1923	
	Assoc. M.	June 6, 1927	

Reinstatements

ASSOCIATE MEMBERS	Date of Reinstatement.
NOLAN, Simon Frank.....	June 13, 1927
JUNIORS	
CLARK, Clair Louis.....	April 19, 1927

Resignations

MEMBERS	Date of Resignation.
FITCH, Josiah Huntington.....	April 19, 1927
HUSTED, Alva Guy.....	June 13, 1927
HUTCHINGS, William Evelyn.....	June 13, 1927

ASSOCIATE MEMBERS

	Date of Resignation.
CECIL, Neil McComas.....	June 13, 1927
HEMPEL, Roy Edward.....	April 19, 1927

JUNIORS

GREINER, Waldo Karl.....	June 13, 1927
STROYAN, Philip Bateman.....	June 13, 1927

Deaths

- BALDWIN, Hiram Ellsworth. Elected Associate Member, January 2, 1895; died April 16, 1927.
- BREMNER, George Hampton. Elected Member, December 6, 1899; died April 2, 1927.
- BRYAN, Charles Walter. Elected Member, June 3, 1903; died June 25, 1927.
- COBB, Louis Reno. Elected Member, September 12, 1916; died May 9, 1927.
- CURREY, Jesse Albert. Elected Affiliate, February 1, 1910; died June 23, 1927.
- DARRACH, Charles Gobrecht. Elected Member, January 5, 1876; died June 1, 1927.
- DAWLEY, William Sanborn. Elected Member, October 4, 1905; died May 18, 1927.
- DESSERTY, Floyd Gossett. Elected Associate Member, February 28, 1911; Member July 11, 1921; died May, 1927.
- DUBUIS, John. Elected Junior, October 1, 1912; Associate Member, January 6, 1915; died May 11, 1927.
- ERICSON, John. Elected Member, May 7, 1902; died April 25, 1927.
- GOODELL, John Milton. Elected Affiliate, July 29, 1891; died June 21, 1927.
- HENDRICKS, Kearney Everett. Elected Associate Member, October 4, 1910; Member June 6, 1921; died May 14, 1927.
- HOWELLS, Julius Merriam. Elected Member, June 4, 1902; died April, 1927.
- HOWLAND, Benjamin Franklin. Elected Member, October 2, 1922; died May 27, 1927.
- HUNTER, Joseph Wray. Elected Member, May 3, 1910; died May 19, 1927.
- LOW, Emile. Elected Member, May 2, 1888; died May 25, 1927.
- MACARTNEY, Thomas Wakefield. Elected Associate Member, January 19, 1920; died November 23, 1926.
- MARTINEZ y RENGIFO, Conrado Eugenio. Elected Associate Member, October 7, 1908; Member, September 9, 1919; died May 21, 1927.
- MOWRY, John Barrows. Elected Junior, December 14, 1925; died April 19, 1927.
- PARMELEE, Charles Lester. Elected Member, February 4, 1913; died April 4, 1927.
- PRIME, Alfred Cox. Elected Associate Member, November 4, 1908; date of death unknown.
- SCOTT, Addison Moffat. Elected Member, June 2, 1886; died April 27, 1927.
- SOMERS, Robert Teeters. Elected Associate Member, June 6, 1921; died April 5, 1927.
- SPENGLER, Harry Thomas. Elected Associate Member, January 17, 1921; died April 23, 1927.
- TEMPLE, William Henry Giles. Elected Member, February 3, 1892; died March 6, 1927.
- WARNER, Edwin Hall. Elected Associate Member, May 6, 1891; Member, October 4, 1893; died June 17, 1927.
- WHEELER, Levi Lockwood. Elected Member, June 4, 1884; died March 13, 1927.
- WONDERS, James Crew. Elected Member, April 14, 1919; died June 6, 1927.

Total Membership of the Society, July 5, 1927

Members	5 315
Associate Members	5 624
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Corporate Members.....	10 939
Honorary Members.....	14
Juniors	1 281
Affiliates	145
Fellows	8
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Total	12 387